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**LESSONS LEARNED  
(VIETNAM)**

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"This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied."

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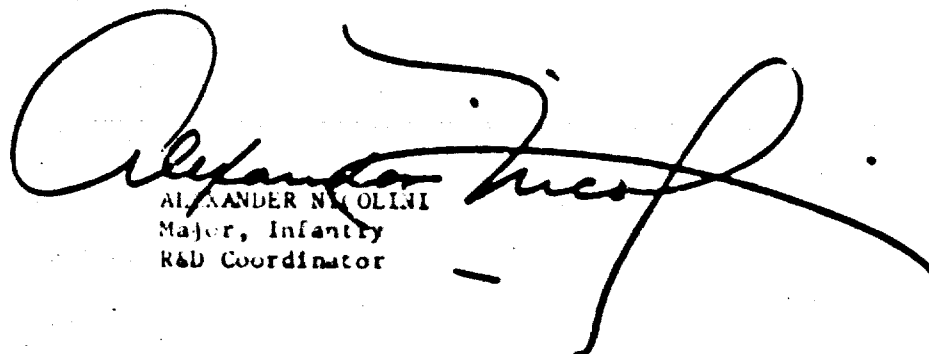
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PART ONE

UNITED STATES CONTINENTAL ARMY COMMAND'S  
"LESSONS LEARNED"

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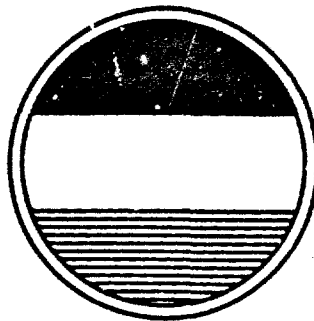
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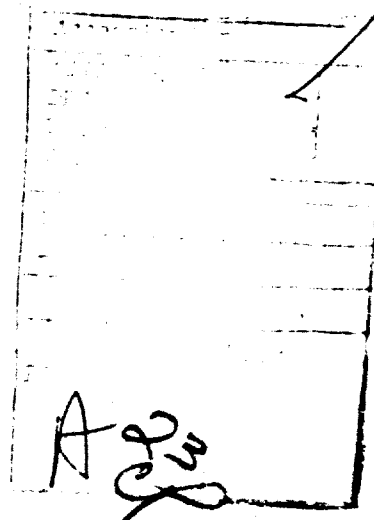
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# EDUCATION AND TRAINING:

OPERATIONS - LESSONS LEARNED



OCTOBER 1965



HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND  
FORT MONROE, VIRGINIA

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HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND  
Fort Monroe, Virginia

Pamphlet

18 October 1965

No 350-30-1

EDUCATION AND TRAINING

OPERATIONS - LESSONS LEARNED

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references in current training publications.

2. General. Many lessons learned are being derived from operations in Vietnam, the Dominican Republic, major field exercises, and other pertinent sources. These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most

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of our doctrine is sound and is being correctly applied. This also suggests that in training certain principles that of necessity the commanders are not presented in a manner that insure full understanding and effective execution by units when the need arises.

3. Objectives. The objectives are for

- a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.
- b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.
- c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.
- d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.
- e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Application. Commanding generals, 21 armies and USAJFKCENSPWAR will insure that the contents of this pamphlet are disseminated to each battalion, separate company and detachment within their Army area with the least practicable delay. In unit training programs, emphasis will be given to the close correlation of the contents of this pamphlet with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3 above.

5. Frequency of publication and numbering system. This is the first issue of a quarterly series. Each subsequent publication will bear the same basic number, however consecutive sub-numbers will be assigned to each new issue.

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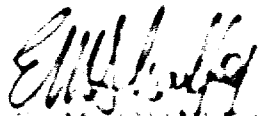
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Appendix I

Suggested Areas for Additional Training Emphasis

Insurgent Observation

A report included comments on subjects which the writer considers should receive additional emphasis in training within the Continental United States:

"a. Receipt of personnel inadequately trained in basic infantry combat techniques continues to be a source of problems in this command. In Viet Nam, it is the secondary mission of every American Soldier to be capable of fighting as infantry. This implies a knowledge of individual basic infantry combat skills and small unit tactics, particularly in the techniques of position and perimeter defense. Nearly every man assigned to this Airmobile Company becomes, upon alert or enemy attack, an infantry soldier performing an infantry soldier's duties. Most of the personnel of this unit are poorly prepared by training to execute this supplementary role so critical to the collective defense of every U. S. military installation in Viet Nam. Efforts to bring personnel to an acceptable degree of proficiency once they are received in the theater are impeded by insufficient time and lack of adequate cadre training facilities. It is recommended that greater effort be expended to train all soldiers in basic infantry tactics and techniques before teaching special and technical skills. The conditions of service in Viet Nam demand that every soldier be both infantryman and technician.

"b. Another area of deficiency is the quality of duty performed by U. S. personnel as interior guards. The stealthy nature of the enemy does not allow a parade ground approach to interior guard duty, especially during the hours of darkness. Additional emphasis must be placed upon training the soldier in effective techniques of placing a guard post under effective surveillance and securing it against enemy infiltration and sabotage, especially during the hours of darkness.

"c. Based upon the situation described above, recommend:

"(1) That additional emphasis be placed upon training in basic infantry techniques and small unit tactics, techniques of position defense to include the use of barriers, fortifications, and fire plan, and qualification in the following weapons:

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- "(a) M-14 Rifle
- "(b) M-16 Rifle
- "(c) M-60 Machine Gun
- "(d) Cal. 50 Machine Gun
- "(e) M-79 Grenade Launcher
- "(f) Cal. 45 Pistol
- "(g) Claymore Mine
- "(h) Anti-personnel Mine
- "(i) Fragmentation hand grenades

"(2) That more thorough, realistic training be given in interior guard techniques which will be effective against infiltration by stealth during the hours of darkness."

#### Lesson Learned

"In any army, no matter what advances are made in the technological field, the requirement for every soldier to be proficient in the basic skills will remain the primary task. Only when the individual is proficient as a soldier can the advance to MCS qualification make sense."

#### References:

- Paragraph 2-3, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."
- Paragraph 11-12, FM 26-5, "Interior Guard."
- Chapter 8, FM 31-16, "Counter guerrilla Operations."

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## Appendix II

### Training in Theater

#### Incident/Observation.

"Training in defensive and security measures is constantly stressed with a practice alert held weekly. 'On-the-job' training is conducted daily, and personnel spend a minimum of one hour each day improving defensive positions. Training also covers familiarization training in individual weapons."

#### References:

Chapter 3, FM 7-10, "Rifle Company, Infantry and Airborne Battle Groups."

Paragraph 48, FM 31-30, "Jungle Operations."

Paragraph 159 through 167, FM 100-5, "Field Service Regulations-Operations."

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## Appendix III

### Joint Operations and Procedures for Airmobile Operations

#### Incident/Observation.

"Quality control and consistency in coordination between US Army Aviation and US Air Force elements in the conduct of airmobile operations is a major problem area. Although there are notable exceptions, experience in the unit indicates that USAF Forward Air Controllers do not, in general, understand the requirement for close, continuous and coordinated fires in and immediately adjacent to the landing zone during airmobile operations such as a: landed assaults and troop extractions. This lack of understanding and appreciation for the requirements of successful heliborne operations has been demonstrated many times by ill-chosen fighter bomber ordnance loads, air strikes terminated much too soon, and close air support fires placed much too far from friendly troop positions and helicopter landing zones to be effective in neutralizing possible sources of enemy ground fire. These discrepancies continue to occur despite repeated efforts on the part of the Army Aviation planners to bring the Air Force fighter bombers in to close wing tip to rotor tip supporting distances. Coordination of US Army Aviation and US Air Force elements to bring Air Force high performance air support fires to within one hundred (100) meters of the landing zone is mandatory to insure the future of heliborne operations in the face of the expanding efficiency of Viet Cong anti-helicopter tactics. The armed helicopter, while suitable for troop ship escort in lightly held areas, is entirely inadequate when pitted against organized fortifications and determined enemy resistance."

#### Lesson Learned

"The entire future of helicopter assault operations is hinged upon effective close combat air support by US Air Force elements. To attain this closely coordinated effort, the following criteria must be met:

"a. The US Air Force Forward Air Controller (FAC) and the US Army Aviation element Operations Planning Officer must be cross trained and jointly instructed in the conduct of both the USAF and US Army portions of an airmobile operation as integral parts of one continuous operation, rather than as separate but related components of a single combat operation."

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"b. The FAC must be a member of the planning team from inception to execution of the operation. He must be responsive to the requirements of the Army Aviation Element Operations Planning Officer.

"c. The FAC must be capable of selecting the most effective ordnance loads in adequate quantity, and must have the authority to insure that fighter bombers are fitted with the selected loads.

"d. The FAC must be capable of establishing personal liaison with the fighter bomber pilots prior to the mission in order to adequately brief them in the detail required to offer reasonable assurance of successful mission accomplishment. On target orientations are unsatisfactory almost without exception, since they do not allow for the fine distinction of one hundred (100) meters distance which is so critical to the success of the operation. An alternate or complementary solution might lie in having the FAC lead the strike in a fighter bomber himself, thus actually striking required targets in precisely the manner he wishes subsequent sorties to execute their strikes."

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#### Appendix IV

#### Enemy Tactics

##### 1. Incident/Observation.

"A study of VC methods over the years has shown that incidents have in the main followed a set pattern, which consist of one slow action and four fast actions. The five point order of attack can be set out as follows:

- Slow and meticulous attack preparations and rehearsals
- Fast closing in with the enemy and attack
- Fast and determined destruction of enemy resistance
- Fast mopping-up of the battle area (arms, prisoners, casualties)
- Fast withdrawal to base areas."

##### Lesson Learned

"The VC has ample time to seek for and study weaknesses in our methods. Set patterns of movement or operation will prove suicidal. Like a bank robber, the VC thoroughly cases his intended victim before execution of his plan. So as to beat the VC at his own game, plans and actions must be highly flexible, original in adaptation and avoid any tendency to follow any form of rigid pattern."

##### Reference:

Subparagraph 37a and b, FM 31-16, "Counter guerrilla Operations."

##### 2. Incident/Observation.

"Personnel in vehicles which carry automatic bipods were receiving concentrations of sniper fire and thus suffering a disproportionate casualty rate."

##### Lesson Learned

"Bipods were removed from vehicles while on offensive operations to prevent easy identification of automatic weapons."

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3. Incident/Observation(s).

a. "Infantry troops entered VC village in support of Vietnamese officials from the Office of the Province Chief. Approximately 200 civilians were assembled and told by the Vietnamese that their village was to be destroyed and they were to abandon the area. They were given 72 hours to move to designated areas. As the troops turned to leave, an officer was wounded by a hand grenade obviously thrown by a civilian in the crowd."

b. "Infantry troops suffered losses in initial weeks of contact with VC from sniper fire directed from tree houses."

Lesson Learned

"Constant state of alert must be maintained by individual soldiers."

References:

Paragraph 25, 26, and 27, FM 31-16, "Counter guerrilla Operations."  
Subparagraph 44b(5), FM 31-30, "Jungle Operations."

4. Incident/Observation(s).

a. "Patrol walked into an ambush consisting of 2 machine guns and one platoon of riflemen deployed along each side of a stream bed. Good observation and quick individual reaction threw the ambush force into confusion and inflicted casualties."

b. "A VC ambush set off a land mine against our troops and then engaged them with small arms fire. Although wounded and dazed by the mine explosion, the squad leader, a sergeant, led his squad forward and by aggressive fire and maneuver forced the VC to flee."

c. "Experience has indicated that most patrol encounters with the enemy are sudden surprise engagements. Often reaction time by the patrol point has been too slow to score kills. The VC is thoroughly trained to quickly jump into the brush when encountered."

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### Lesson Learned

a. "When caught in ambush situation, losses are minimized by quick individual reaction and immediate concentration of fire and maneuver on ambush positions, e.g., a frontal attack behind a heavy volume of fire by elements in the killing zone and flanking movement by leading or trailing elements. Immediate action drills, on foot and from vehicles, need to be practiced, perfected and known by all troops. Use should be made of smoke grenades to cover initial deployment."

b. "The VC is likely to afford only a fleeting target when he shows himself. Training must emphasize the need to attain a high standard of marksmanship with first shot hits and practice is needed on jungle type ranges with surprise targets for reflex conditioning."

### USCONARC Comment

Whenever practicable, mortar and artillery fire should be brought down on enemy escape routes until they can be sealed off by ground forces.

#### References:

Paragraph 66 and 109, FM 31-16, "Counter guerrilla Operations."  
Paragraph 58 and 59, FM 31-30, "Jungle Operations."

#### 5. Incident/Observation.

"Enemy tactics are increasingly designed to exploit US troops' efforts to kill VC. This is done by offering bait, i.e., exposure at a distance, sniper fire, and open smoke fires, etc, in an effort to draw patrols into ambush, cross fires or booby trapped areas."

#### References:

Subparagraph 1e, FM 31-16, "Counter guerrilla Operations."  
Paragraph 300, FM 100-5, "Field Service Regulations-Operations,"  
as amended.

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6. Incident/Observation(s).

a. "The VC guerrilla has prepared mortar firing positions which do not require use of base plate. This is accomplished by digging cylindrical angled hole in the ground with a rock or wooden block in the bottom to absorb impact. This hole is so angled as to require no aiming of tube for pre-selected targets. In this manner several quick rounds can be fired into our installations and the guerrilla can flee leaving the camouflaged buried tube behind for use again."

b. "The majority of the activity one night centered around a position where the artillery task force received mortar fire and several probing attacks. Quick reaction by all forces answered these attacks with small arms, mortar, artillery and 90mm fires and the Viet Cong was forced to withdraw. The tail fins of the incoming mortars identified the round as 81mm U. S. mortars made in 1955. The shell craters were closely examined, three of them indicated that the rounds were coming from 725 to 730 mils. Artillery and mortar fires were delivered along this line up to the maximum range of the 81mm mortar. The enemy stopped firing."

Lesson Learned

"Any unit coming under enemy mortar fire must report immediately the sound bearing to the enemy's firing position. Every effort must be made to collate these reports and react with counterfire in the quickest possible time in order to catch the VC before he flees his firing position. The minimum requirement is to know the direction shells/bombs are coming from, type of weapon (if possible) and location of target area."

USCONARC Comment

Harassing patrols should be dispatched to follow-up the counter bombardment whenever practicable.

References:

Paragraph 86, FM 6-20-2, "Field Artillery Techniques," as amended.

Appendix III, FM 6-121, "Field Artillery Target Acquisition."

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7. Incident/Observation.

"A company came under heavy enemy small arms and mortar fire during the process of being landed by helicopter. Prompt deployment and concentrated fire into the forest surrounding the landing area secured landing zone for additional incoming helicopters."

Lesson Learned

"Units must be ready to engage enemy immediately upon landing by helicopter with all types of weapons available."

References:

Paragraph 180, FM 7-11, "Rifle Company, Infantry, Airborne Infantry and Mechanized Infantry."

Subparagraph 135b, FM 7-15, "Infantry, Airborne Infantry, and Mechanized Infantry, Rifle Platoons and Squads."

See also paragraph 4, appendix V, this Pamphlet.

8. Incident/Observation.

"The VC will launch attacks against the helicopter landing zone when the main body of our troops have been lifted out, and only a small rear guard remains in position."

Lesson Learned

"Artillery forward observers should always be among the last personnel to leave the landing zone in order to direct pre-arranged artillery fire plotted for close-in protection."

Reference:

Paragraph 67, FM 57-35, "Airmobile Operations."

9. Incident/Observation(s).

a. "The Viet Cong make an almost fanatic and usually successful effort to evacuate their own dead and wounded from battlefield particularly at night."

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b. "VC units conducting night attacks often break off attack and stop firing abruptly. If our troops also stop firing, enemy will use lull to recover dead, wounded and weapons from the battlefield."

#### Lesson Learned

"Most Vietnamese practice a form of ancestor worship. Many believe that if a dead body is not buried near the bodies of its ancestors, the spirit belonging to that body will wander for all eternity and cannot return for family festivals. This belief accounts in great measure for the fanaticism displayed in battlefield recovery of bodies. Following encounters with the VC, involving many casualties, fresh graves will provide an indication of the source of the VC involved if they managed to remove their dead. Frustrating removal of the dead will lower VC morale. Units must continue to harass battlefield and likely routes of withdrawal with fire to obtain maximum enemy casualties as he attempts to police battlefield."

#### 10. Incident/Observation.

"A 50 caliber automatic anti-aircraft weapon was discovered by an aviation platoon. The platoon coordinated an effective attack on the enemy position by VNAF fighter bombers which destroyed the position. This incident clearly stressed the need for fast and effective communication to all supporting units."

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Appendix V

Basic Tactics - Friendly Forces

1. Incident/Observation.

"Emphasis has been placed on offensive tactics to the point that we may have overlooked the fact that sometimes a defensive posture must be assumed. Although offensive action is essential for the capture of objectives, disruption of enemy activities and inflicting the maximum number of casualties on enemy formations, the principles of defense must not be ignored. Hard fought gains can be completely lost if effective defense measures are not taken during reorganization phases."

Lesson Learned

"Small unit commanders must quickly learn to appreciate the use of defensive terrain and the proper employment of supporting weapons in the defense."

References:

Paragraph 48-51, FM 31-30, "Jungle Operations."  
Chapter III, FM 7-10, "Rifle Company, Infantry and Airborne Battle Groups."  
Paragraph 159-167, FM 100-5, "Field Service Regulations-Operations."

2. Incident/Observation(s).

"a. Small units are having the most success in coming to grips with the VC as forces larger than a platoon normally force VC into hiding. Noise discipline and fire discipline are better in small units."

"b. Too often ambushes are well planned and positioned only to completely fail due to one single mistake by either a soldier or the commander. Some of the most common mistakes are:

"a. Failure of noise discipline (coughing, talking, shifting around, clattering canteen, etc).

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"b. Ambush sprung too soon alerting VC.

"c. Failure to pursue by fire when VC jump into underbrush.

"d. Failure to quickly exploit and search area for casualties and dead.

"e. Failure to provide for illumination in connection with sweep after ambush."

#### Lessons Learned

a. "The squad has a better chance to move undetected into an ambush site than does a larger unit.

b. "Planning and positioning is only the first step in conducting a successful ambush. Discipline must be maintained, the plan of attack understood thoroughly and the proper equipment and appropriate supporting arms made available."

#### References:

Chapter 16, Section VI, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 159-166, FM 7-10, "Rifle Company, Infantry and Airborne Battle Groups."

Paragraph 56-61, FM 31-30, "Jungle Operations."

#### 3. Incident/Observation.

"During an airborne assault deep in war zone, a cavalry troop was assigned the mission of providing a flank screen for an infantry operation. The cavalry troop made a swift, but thorough search of their assigned area and discovered four VC cache points containing approximately 200 tons of rice and quantities of cigarettes, tea, milk, corn, barley and tobacco."

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#### Lesson Learned

"Search operations must be rapid, systematic and extremely thorough to be effective. The successful operation described above was a serious logistical blow to the enemy."

#### References:

Paragraph 47-52, 59 and 105, FM 31-16, "Counter guerrilla Operations."

#### 4. Incident/Observation.

"A company was given its mission only minutes before take-off. The mission involved flying into a Landing Zone to engage a VC force, and called for pre-planned fire support. This mission was successfully accomplished despite the fact the VC kept up a high volume of small arms and mortar fire. Full use was made of suppressive fires by the ground troops to assist incoming helicopters. At a given signal all M79 gunners laid a high angle barrage into the wooded areas surrounding the landing zone. The rapid course of events necessitated concise use of the radio for passing orders."

#### Lesson Learned

"The war in Vietnam demands flexibility in planning and execution. Units must be ready to engage in operations on short notice, and remain flexible for last minute instructions and changes. Radio transmissions must be short and to the point. Unless the message will affect the operations keep off the air. Unorthodox and original use of weapons will often pay dividends."

#### References:

Subparagraph 38d and paragraph 117, FM 24-18, "Field Radio Techniques."

Paragraph 180, FM 7-11, "Rifle Company, Infantry, Airborne Infantry, and Mechanized Infantry."

See also paragraph 7, appendix IV, this pamphlet.

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5. Incident/Observation.

"One of the things which helped the lift out of helicopters to get to the right spot at the right time was the use of colored helmets and fluorescent vests by guides at the pick-up zones."

Lesson Learned

"Some form of identification which can be changed at required intervals to prevent VC adaptation and usage is essential."

Reference:

Paragraph 52, FM 31-16, "Counter guerrilla Operations."

6. Incident/Observation.

"A commander observed: 'Another thing I feel strongly about out here is stopping your units just before dark. It is almost impossible to maneuver anything in the jungle at night.'"

Lesson Learned

"Whenever possible, operations should be timed to allow troops sufficient daylight to dig in and establish night positions."

USCONARC Comment

In cases where an operation cannot be broken off, other units should assist by helping to prepare positions for the fighting unit to fall back to within the area of their own positions.

Reference:

Subparagraph 37d, FM 31-30, "Jungle Operations."

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7. Incident/Observation.

"Support battalion troops could be used effectively in the combat zone to perform specialized missions which are at present tying down combat troops. Teams could be formed to blow up tunnels and bunkers in villages; and assist in providing security guards for CP's, field communications, maintenance teams, etc."

Lesson Learned

"Any use which can be made of support units to relieve combat troops for the pursuit and destruction of the enemy in an emergency situation is to be encouraged."

Reference:

Subparagraph 2b, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

8. Incident/Observation.

"A problem exists in differentiating between the priorities of fire support missions."

Lesson Learned

"The problem of determining fire support priorities is never easy, and must rest upon the judgment of the task force commander as advised by his artillery commander, and based upon up-to-the-minute situation reports on the command radio."

References:

Paragraph 81, FM 100-5, "Field Service Regulations-Operations," as amended.

Paragraph 4-3, FM 61-100, "The Division," as amended.

9. Incident/Observation.

"A commander stated: 'Whenever we have been caught we have been moving on trails. When we have been moving through the scrub, the enemy has never caught us and we can pick him up as he uses the scrub also.'"

Lesson Learned

"The use of established routes is most likely to provide the enemy with opportunities to inflict casualties on our own troops. To beat him at his own game, our forces should move away from recognized routes."

Reference:

Subparagraph 47c, FM 31-30, "Jungle Operations."

Appendix VI

Knowledge of Current Use of Weapons and Equipment

1. Incident/Observation.

"In one instance our outpost fired against a VC patrol too soon dispersing the enemy rather than destroying him. On another occasion a machine gunner held his fire until the enemy was right on him. When he began firing, five VC were killed, the closest falling only six paces from the gun muzzle."

Lesson Learned

"In many situations, rifles and machine guns should only be used at close range when there is a certainty of a kill. This requirement calls for very strict fire control and fire discipline at the lowest level."

Reference:

Paragraph 62, FM 31-30, "Jungle Operations."

2. Incident/Observation.

"Soldier threw grenade into village hut and stood outside the grass wall waiting for the detonation. He was wounded by grenade fragmentation."

Lesson Learned

"Viet Cong village search and clear operations require a different technique from usual house to house fighting. Walls of grass-type huts found in Viet Nam will not contain an explosion. The soldier must seek cover immediately after tossing grenade to protect himself from the resulting fragmentation."

Reference:

Subparagraph 7c(1)(d), FM 23-30, "Grenades and Pyrotechnics," as amended.



3. Incident/Observation.

"Lack of familiarity and training in handling ordnance items and loaded weapons basic to our combat units have resulted in injuries and deaths."

Lesson Learned

"Stress must be placed on constant checks of weapons by individuals to insure familiarity with safety requirements for operations."

4. Incident/Observations(s).

a. "Soldier had feet hanging out of helicopter on take off. Take off was low over bamboo thicket. Soldier was wounded in the foot by bamboo sliver."

b. "Troops moving toward exit of helicopter just before touch-down resulted in shift of weight and crash."

Lesson Learned

"Feet must be kept inside helicopters and movement inside these ships restricted until they are firmly on the ground."

Appendix VII

Individual Inquisitiveness and Alertness

1. Incident/Observation.

"On two occasions enemy contact was made by our troops immediately after some civilians were observed in the unit area. Women are often used by VC for reconnaissance. Any Vietnamese who lives in a village and can read and write must be suspected as a Viet Cong. Since literate persons loyal to the RVN government have been prime targets for the VC for years, it is unlikely that such Vietnamese other than VC would have survived."

Lesson Learned

"Any unidentified civilian in a unit area must be considered to be a potential enemy."

Reference:

Paragraph 41, FM 30-5, "Combat Intelligence," as amended.

2. Incident/Observation(s).

a. "Due to the highly fluid nature of the combat situation, the standard techniques of intelligence information collection and dissemination are proving too slow."

b. The following extract points up the importance of all soldiers acting inquisitively and thereby assisting our intelligence:

"The individual soldier is the most important source of intelligence we have. What you see, what you find, what you do, is valuable intelligence. Because you do report what you see, because you do report and turn in captured material and documents, because you do these things we and you, know more about the enemy, and because we know more about him, we are defeating him."

"Some concrete examples of what I'm talking about are the facts:

"1. That one of you captured and turned in a Viet Cong gas mask, the first one turned in through military channels since the war began. A plastic bag, with a cotton gauze pad containing charcoal, it is being analyzed by technical intelligence agents at this time.

"2. Because of the documents you found and turned in we know that our operations area is divided into two distinct areas, a supply or storage area and a military area.

"3. We know the designations of the units in these areas. We know the unit we met and defeated during the operation were, in part, members of a VC battalion, a main force Viet Cong unit.

"4. Because you captured prisoners and they talked under interrogation we know that we inflicted heavy casualties on this Battalion and the other Viet Cong units which you met and defeated.

"5. Because of the weapons you turned in, their make and condition we know the Viet Cong are armed with newer model weapons, and because of all of this we know more about the enemy we face and all of this because of your efforts.

"Extreme care must be exercised in the manner in which we treat prisoners. Once they are disarmed we must actually be nice to them. Besides being morally sound people we must realize from a military point of view that the prisoners know something that we must learn. If we treat them properly word will get out and it will be easier to induce the enemy to surrender on the next operation. If we treat them in such a manner that they can "calm down" they will be much more prone to tell us what they know. As soon as we can get them back to the Brigade S2 he will try to find out the answers to several questions. First, Where should we shoot next? Second, Where should we move our troops to minimize our casualties and still catch more prisoners? Third, What units are we fighting and what are they planning to do next?"

#### Lesson Learned

"Immediate transmission of information to lower, higher and adjacent intelligence sections must be accomplished if it is to be of value. Individual soldiers must be made aware of the continual requirement to be alert and suspicious and to report all activities in their sectors.

The importance of negative reports should not be overlooked. Report all unusual incidents."

References:

Paragraph 17, FM 7-15, "Infantry, Airborne Infantry and Mechanized Infantry, Rifle Platoons and Squads."

Paragraph 116, FM 31-16, "Counter guerrilla Operations."

Paragraph 51-53 and subparagraph 108c, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

3. Incident/Observation.

"Many village search operations are ineffective due to lack of communication with natives."

Lesson Learned

"Units given a search and sweep task should be provided local interpreters to ease their task and assist in obtaining information - otherwise denied through language difficulties."

Reference:

Paragraph 12, FM 31-30, "Jungle Operations."

4. Incident/Observation.

"Villagers will often flee at sight of American troops."

Lesson Learned

"This is a good indication of the presence of a sizeable VC force."

5. Incident/Observation(s).

a. "Beware of cheap information even if in documentary form. The VC are adept in stimulating a 'Wild Goose Chase,' and setting up an ambush to capitalize on the situation."

b. "The Vietnamese rarely disagree openly with anything said to them. Naturally, none will admit being a VC to members of the opposing side. Their eyes and expression sometimes betray them and they know it. Watch out for the furtive ones of either sex at any age."

c. "While the VC in some numbers may hide between operations in tunnels, a great many of them are the Vietnamese you see in the villages, shops and rice paddies."

d. "Intensive military operations may be expected both during VC holidays and those of their adversaries, the latter in an attempt to cause the adversary to lose "face" during a time when a nation tends to glorify its past and optimize the present."

#### Lesson Learned

"Knowledge of the enemy, even to the smallest detail is most important. For want of such knowledge, an operation can be lost."

#### Reference:

Paragraph 51-52, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

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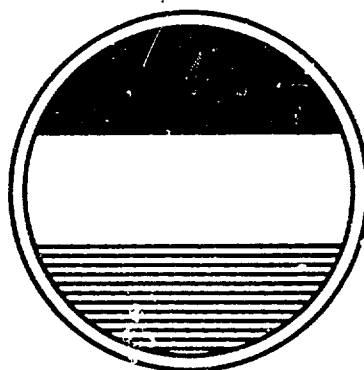
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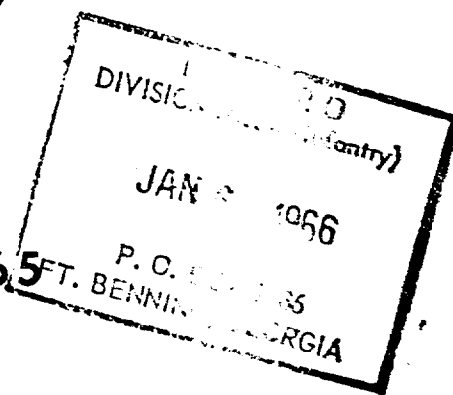
NO 350-30-2

# EDUCATION AND TRAINING

## OPERATIONS - LESSONS LEARNED



DECEMBER 1965



HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND  
FORT MONROE, VIRGINIA

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CON Pam 350-30-2

HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND  
Fort Monroe, Virginia

Pamphlet

15 December 1965

No 350-30-2

EDUCATION AND TRAINING

Operations - Lessons Learned

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references to current training publications.

2. General. Many lessons learned are being derived from operations in Vietnam, the Dominican Republic, major field exercises, and other pertinent sources. These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most of our doctrine is sound and is being correctly applied. This also indicates that in training certain principles must be continually emphasized and presented in such a manner as to insure full understanding and effective execution by units when the need arises.

3. Objectives. The objectives are to:

a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.

b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.

c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.

d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.

e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Orientation. The country of Vietnam varies considerably, ranging from open flatlands interspersed by rivers and canals to dense jungles and mountainous terrain. Headquarters, US Forces Vietnam have stressed the point that "tactics and techniques which prove successful in a given area may not render the same results in all sections of the country." This factor should be borne in mind when reading lessons learned. It accounts for variances in comments from commanders in

the field. It points up the continued requirement for flexibility and a readiness to adapt to the type of terrain so as to use it to the best advantage.

5. Application. Sufficient copies are furnished Commanding generals, ZI armies and USAJFKCENSPWAR (Abn) to permit further distribution. In unit training programs, emphasis will be given to the close correlation of the contents of this pamphlet with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3, above.

6. Frequency of publication and numbering system. This is the second issue of a quarterly series. Each subsequent publication will bear the same basic number, however, consecutive sub-numbers will be assigned to each new issue.

(ATUTR-TNG)

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Appendix I

Lessons Learned From Combat Command Reports

Section I

Suggested Areas for Additional Training Emphasis

1. Incident/Observation.

"Before the arrival of US units in Vietnam, the Viet Cong had almost absolute freedom of movement at night, for very few night operations were conducted by the ARVN Forces. Several night infiltration operations were initiated, which threw the VC into a state of confusion and caused him to be unsettled for many days thereafter. Night operations are now the norm for this unit and definitely upset the VC, while at the same time reducing casualties to US Forces because of the security gained by surprise and cover of darkness in making rapid moves to blocking or assault positions.

Lesson Learned

"All units must receive adequate training in night operations from the squad through the brigade level. Further emphasis should be placed on night movement cross-country over difficult terrain and over extended distances."

USCONARC Comment

Training for night operations will need adaptation to meet the separate requirements imposed by different types of terrain, e. g., combat formations practicable in open country may well need considerable adaptation in thick jungle.

References.

Paragraphs 38, 57, and 65, FM 31-30, "Jungle Training and Operations."

Subparagraph 142b(4), FM 31-16, "Counter guerrilla Operations."

Item from "Items of Army-Wide Interest," 20 September 1965, reprinted below:

"Night Operations Training.

"1. Effective operations during the hours of darkness are essential in all warfare, but in particular in counter guerrilla warfare. The basic ingredient of successful night operations -- offensive or defensive -- is the confidence of the individual soldier in his ability and that of his unit to operate in the night environment. This confidence comes only from detailed planning and painstaking, successful training.

"2. A well-organized training program that devotes from one quarter to one third of the training time to night operations can provide our soldiers with the necessary knowledge, confidence, and skill they need for night combat. Requirements for night training will vary among commands; however, it is extremely important that Army personnel going to the Republic of Vietnam (RVN) have the training which will enable them to fight at night as well as during daylight.

"3. The U. S. Army's experience in night operations in World War II and Korea is reflected in current doctrine and training literature. Army doctrinal publications emphasize that night combat is "an integral part of all operations." These publications cover night attack and defense, retrograde operations, counter-insurgency operations, and airborne, airmobile, amphibious and other types of operations conducted at night. Army training programs provide guidance for both individuals and units in night training.

"4. The key to successful night training is to schedule training which includes transition of operations from day to night, and vice versa. This training should be scheduled as an uninterrupted tactical exercise. Further, the scope of training should not be limited but should include all aspects of tactical operations. Offensive actions involving night movement should be stressed.

"5. Areas in which increased emphasis should be placed are:

"a. Techniques of fire during periods of darkness.

"b. Individual weapons firing under all conditions of natural and artificial illumination.

"c. Night relief procedures at small unit level.

"d. Night reconnaissance patrols.

"e. Individual proficiency in land navigation at night.

"f. Individual and unit night discipline. *stunth*

"g. Use of detection devices in offensive and defensive night operations.

"h. Night live firing exercises for squads and platoons.

"6. In conjunction with night operations it becomes apparent that to cope with the rigors of the environment and sustained day and night operations in RVN, personnel must be in the best possible physical condition. To do this will require much more than the average physical training program of 2 or 3 hours a week. A high and continuing demand must be placed on the physical capacity of the individual in order to build confidence in his ability to function properly under conditions of prolonged physical exertion. This element could well be considered for inclusion in the Army Training Tests/Operational Readiness Tests for infantry units.

"7. It is the self-sufficient, confident, well-trained, physically capable soldier who can survive in RVN in both day and night combat operations."

2. Incident/Observation.

"Within two days of arrival in-country, all units posted ambush patrols at night and sent out reconnaissance and combat patrols during the day. The patrols covered difficult and unfamiliar terrain. The hot climate and mountainous jungles led to greatly increased water consumption, thereby creating an immediate problem of water resupply. In some instances, patrols had to halt and await resupply of water in order to minimize cases of heat exhaustion." *no vision -*

Lesson Learned

"Infantry units need to spend time conducting training in country resembling Viet Nam, e. g. the hills, forests and swamps available in

local areas. Stress should be placed upon squad and platoon sized patrols of all types (ambush, reconnaissance, and combat) and upon ambush and counterambush techniques."

Reference.

Chapter 10 and paragraph 179, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

3. Incident/Observation.

"The situation in Viet Nam presents numerous occasions for long range patrols deep into enemy territory. Special Forces units in Viet Nam have accumulated considerable experience in long range patrolling and have evolved successful organization, tactics and procedures for long range patrols."

Lesson Learned

"Selected officers and NCOs should receive training in the tactics and techniques of long range patrols."

References.

Paragraph 115, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 40, FM 31-30, "Jungle Training and Operations." (Sept 1965)

Paragraphs 72-74, FM 31-16, "Counter guerrilla Operations."

Paragraph 66, FM 21-50, "Ranger Training and Ranger Operations."

4. Incident/Observation.

"The use of reconnaissance platoons during CONUS training exercises in no way resembles their use under fire in Viet Nam. While vehicles are necessary to reach an area of operations, the actual missions of screening, blocking, and reconnaissance are normally conducted on foot. The reconnaissance platoons often have been forced by the realities of war in Viet Nam to dismount MGs and employ the conventional tactics of the rifle platoon."

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## Lesson Learned

"Reconnaissance platoons need to place emphasis in discharging their various missions in a dismounted role, in addition to training in the mounted role."

### References.

Paragraph 66 and appendix IV, FM 7-20, "Infantry, Airborne Infantry, and Mechanized Infantry Battalions."

Paragraph 192, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

### 5. Incident/Observation.

a. "Experience to date shows a preponderance of small unit actions. Squad leaders and platoon leaders must be thoroughly grounded in land navigation, the use of TAC air and artillery, and the procedures for calling fire on targets. Small unit leaders must exercise fire discipline to achieve maximum surprise and effect, particularly at night. They must realize the value of combat intelligence and report it quickly. Individual soldiers must be adept with hand grenades as well as with individual weapons. All troops must become proficient in the use of individual camouflage measures and in the detection of concealed positions."

b. "Every major operation since arrival in country has been characterized by the use of helimobile elements, TAC air, armed helicopters, artillery, aerial resupply, command and control ships, and aerial medical evacuation. These techniques are used so extensively and parachute operations so infrequently as to indicate a basic change in the present training emphasis for airborne units destined for deployment to Viet Nam."

## - Lessons Learned

a. "More training time should be devoted to helimobile operations, to include TAC air, and aerial medical evacuation. Particular emphasis should be given to familiarize troops with close support by armed helicopters. All officers and NCOs should be thoroughly versed in procedures for calling in TAC air and artillery fires."

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b. "Emphasis given to individual training and to small unit training, even if the time has to be taken from more advanced unit exercises, is more likely to meet the training needs for Viet Nam."

#### USCONARC Comment

The principles of employing armed helicopters are still in the formative stage. The draft field manual on armed helicopter employment is now out for field review. These aircraft supplement and extend the fire support capability available to the ground commander; however, the armed helicopter is not a substitute for ground based fire or close air support.

#### References.

Subparagraph 76(d), FM 7-15, "Rifle Platoon and Squads Infantry, Airborne and Mechanized."

Paragraph 49, FM 31-30, "Jungle Training and Operations."

Paragraph 150, FM 31-16, "Counter guerrilla Operations."

See item 8, section V, appendix I, this pamphlet.

#### 6. Incident/Observation.

"The new family of radios in the hands of most units entering the country at this time is far superior to anything found in ARVN units. This provides the commander with positive communications and a disadvantage when considered in light of the great number of stations operating on relatively few frequencies. This becomes a problem of critical magnitude during periods of intense ground or air action. The tendency of all too many US soldiers when a radio is made available to them is to transmit incessantly."

#### Lesson Learned

"The solution is one of not only enforcing strict radio discipline, but also of reducing the number of stations on a net to the minimum required for positive control."

#### USCONARC Comment

Training of users of radio, radio telephones and telephones in COMSEC techniques and constant practice will aid in reducing unnecessary traffic.



References.

CON Cir 350-4, "Communications Security Training."  
Appendix V and paragraph 9, FM 7-20, "Infantry, Airborne Infantry, and Mechanized Infantry Battalions."

USCONARC General Comment - Security

"The favorite and most advantageous tactic the VC has grown to rely on is the ambush." Attention to security requires continued emphasis. In stability operations against active guerrilla forces, units must strive to remain on the alert both while in a defensive posture and while on the move. Training should include automatic drills by units at all levels adapting measures to counter-act surprise actions by the enemy. Immediate action drills must be perfected and all individuals imbued with the necessity for never relaxing their guard and the requirement to remain alert and suspicious at all times.

References.

Paragraphs 62-67, FM 31-16, "Counter guerrilla Operations."  
Chapter I, CON Pam 350-16, "Leader's Guide for Operations in Southeast Asia."

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## Section II

### Training in Theater

#### USCONARC Comment

7. After action reports relating to training in theater, which have been received since publication of USCONARC Pamphlet 350-30-1, point up the necessity for the continuation of organized training by units of all types. No specific trends on subjects or methods were discernible that are considered common to similar units. However, it would appear that combat units are emphasizing small unit tactics, fire control and fire discipline; and that combat support and service support units are stressing rear area security.

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## Section III

### Joint Operations and Airmobile Procedures

#### 8. Incident/Observation.

a. "An Aviation unit received a warning order alerting it for an operation against Viet Cong insurgents, in support of an Infantry unit. The mission of the Aviation unit was to airland elements of the Infantry in pre-selected landing zones to conduct a search and destroy operation, and render such aviation support as ensuing operational developments required. The operation began with three lifts into an area. An armed platoon, reconnoitering a large canal to the southwest of the area, came under heavy ground fire and discovered large numbers of Viet Cong in well placed defensive positions. The ground commander decided that the unit, having made little contact at the original landing zone, should be airlanded in the vicinity of the located Viet Cong and initiate a ground attack. The first lift of troops was immediately pinned down and suffered heavy casualties. Two other lifts were also pinned down. The fire from the Viet Cong positions was so intense that by the time four lifts had been made into the area, only seven of the original 16 troop carrying helicopters remained operational."

"The pinned down troops were in imminent danger of being overrun but continuous low level, close-in strafing and rocket attacks by the Aviation Battalion's armed helicopter platoons prevented it. Throughout the night, armed ships continued to attack the entrenched Viet Cong positions and greatly hindered them in their efforts to police up their dead and weapons. Battalion helicopters were credited with preventing an initial rout and subsequent heavier casualties to ARVN troops through the delivery of close-in, discriminating fires."

b. "It is deemed mandatory that a minimum of two rifle companies be carried on the initial lift to take maximum advantage of the surprise factor and to insure maximum forces to secure the landing zone for the protection of succeeding lifts."

#### Lesson Learned

"Troops should be discharged from helicopters at least 500 meters from tree lines or suspected Viet Cong concentrations to allow them sufficient time to reorganize if they should come under fire while unloading."

*beyond effective rifle range.*

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## USCONARC Comment

"Reinforcement units wherever practicable should be airlanded in areas away from the battle area, where they can deploy effectively against the enemy forces taking them from a flank, and making use of the supporting fire of the units already engaged."

References.

Subparagraph 147b(4), FM 7-30, "Infantry, Airborne, and Mechanized Division Brigades."

Subparagraphs 77c(3) and 40, FM 57-35, "Airmobile Operations."

Paragraphs 9-8 and 9-9, FM 61-100, "The Divisions."

9. Incident/Observations.

a. "Visual reconnaissance and surveillance was planned and executed at sector level in accordance with the aircraft employment plan. The method of employment facilitated early detection and rapid reporting of enemy information within the sectors. In addition to aerial surveillance missions, unit aircraft supported all major ground operations executed with Corps during the reporting period. Majority of units' tactical missions involved a composite crew - US Aviator and an ARVN Observer. All unit aircraft will eventually be equipped with 2.75" marking rockets."

## b. An Aviation Battalion reported:

"Criteria used for determining the number of aircraft deployed were size of sector, VC activity, amount of coastline and airfield capability.

"Employment plans revolved around repetitious, systematic coverage of a specific area by the same pilot and observer until complete familiarity is gained within the area. Sectors were to be divided into areas suitable for coverage by one O1F aircraft sortie. Mission priority specified a minimum of 70% of all hours flown be devoted to visual reconnaissance, with four hours per aircraft being the desired daily average."

c. "The procedure of flying specified areas at the same time each day with the same pilot observer team provides a more effective surveillance of area physical terrain features to include tone, texture, color and the detection of possible infiltration routes."

*jungle canopy -*

## Lesson Learned

"The four O1F's currently equipped, have materially assisted forward air controllers in locating targets with a minimum delay. The unit aircraft have performed nearly all kinds of missions possible, yet a predominant number were combat surveillance."

10. Incident/Observation.

"A problem area encountered concerns the Air Force concept that only Air Force aviator personnel can control a fighter strike. At present an effort is being made to change this. It is felt that this type mission could be capably handled by Army aircraft observers with minimum training. It would allow for better response to a need for aerial fire support in those cases where Army observation aircraft are in the area, have the target under surveillance and there is no Air Force observation aircraft to transfer the information to. Army should conduct a study into the feasibility of cross training Army aviators and the establishing of joint procedures whereby the above could be accomplished."

*Platoon leader should be able to request and designate target for air strike when platoon is on independent mission.*  
USCONARC Comment

Current Tactical Air Command policy establishes guidance to TAC personnel so as to permit acceptance of air support requests outside normal channels and to permit control of close air support missions in the absence of Air Force forward air controllers.

A new concept for Improved Joint Air Ground Coordination is currently being implemented. The concept provides both services with improved procedures for requesting and controlling USAF support for Army units. The system assigns USAF Tactical Air Control Parties (TACP) at US Army division, brigade, and battalion level. Joint Air Force Regulation 55-9/Army Regulation 525-5, 2 September 1965, delineates the responsibilities of the Army and Air Force for the provision, command and maintenance of TACP. Major Army units recently deployed were assigned these TACP prior to departure from CONUS. Details of the concept are covered in CONARC Circular 350-32, 20 September 1965. US Army Combat Development Command (USACDC) and US Air Force Tactical Air Command (TAC) are developing a joint manual on close air support which describes the new system in detail.

Reference.

CON Cir 350-32, "Concept for Improved Joint Air-Ground Coordination."

11. Incident/Observations.

a. "An aviation battalion employed a crew of four aboard their helicopters; two pilots, crew chief, and a gunner. After due consideration for the secure condition of the extraction area and the formation of the aircraft, it was decided to eliminate the gunner from the crew allowing one more soldier to be carried. As a result, on two operations an additional 640 personnel were carried by eliminating the gunner. This is significant because in each case, the extraction portion of the operation was expedited considerably, saving an additional lift."

b. "Door Gunner Tour of Duty. It has been proven in Vietnam that a crew of four is essential for safe and effective operation of UH1B, UH1B (Armed) and UH1D helicopters. The crew consists of a pilot, co-pilot, crew chief and door gunner. The crew chief and door gunner man M-60 machine guns on each side of the helicopter and perform two valuable functions. First, they are in the best position to see and locate enemy fire. Secondly, they mark areas where fire is being received and place suppressive fire on enemy positions until armed helicopter firing runs can be made. Having manned machine guns on the troop carriers materially reduces the vulnerability of these helicopters, particularly going into and out of LZs on assault operations. The crew chief and gunner perform similar functions on the armed helicopters and are extremely important members of the air crew."

## USCONARC Comment

Any decision to eliminate the gunner to increase the lift capability can only be determined at the time on a case-by-case study. There will be times during initial landings and retrograde operations when the fire-power provided by a gunner may materially assist the movement of ground troops. This firepower also provides protection for the helicopter when it is most vulnerable during pick-up and landing.

12. Incident/Observation.

"Of particular significance are the new offensive tactics which were tested, evaluated, proven, and extensively utilized through the past quarter. Knowing full well the Viet Cong utilize the thousands of rivers and canals during darkness to transport supplies and troops and that VC employ largely night operations, a system was developed to impede such freedom of transport and movement. The system is called

"Lightning Bug." One helicopter, with cargo doors removed, has a bank of high candlepower lights installed in the doorway with directional facilities built into the system so as to offer manual control of the lights. A fixed wing aircraft equipped with infrared and SLAR makes the initial detection of the targets. The fixed wing aircraft accomplishes this at an altitude so as to be undetected by Viet Cong, and identifies the target and location through an electronic radar process. After receiving the relayed information from the fixed wing aircraft, the "Lightning Bug" flies to the target area and illuminates the target. Following close behind are three armed helicopters which destroy the target. This tactic has been utilized an average of six times a week and has proven extremely successful."

*What about "maneuver bombing" with the mortar shells from the lighted helicopters.*

### 13. Incident/Observation.

"Planning, Reaction and Execution. Whether operating with US or ARVN units it is essential that aviation personnel be brought into the planning at the earliest possible time. This provides the aviation commander with the opportunity to program his resources and to advise the tactical commander on aviation considerations in the plan thereby reducing changes and wasted motion. In general, planning, reaction, and execution is considerably more rapid for US forces than for ARVN. Initial planning is essentially the same in that it is somewhat centralized in both US and ARVN units. After the initial planning however, there is distinct divergence in methods between the two. Where ARVN units will habitually retain even the most detailed planning and execution at a brigade or higher level, US units, after the early planning, will decentralize both planning and execution. This results in a more rapid and concrete final plan and subsequently a more rapid and organized execution. This rapid execution is also enhanced by the higher state of training, more positive control, and general familiarity with aviation operations found in US units."

### Reference.

Subparagraph 146(c), FM 7-30, "Infantry, Airborne, and Mechanized Division Brigades."

### 14. Incident/Observation.

"The Commander of an Aviation Battalion recommended all Army helicopters have one main rotor blade (top of Blade) painted white to present an eye catching image from above to high performance aircraft

*This was being done in some units a year ago.*

operating overhead. Jet pilots have reported difficulty in identifying Army UH-1B helicopters while performing close air support missions during joint operations. The Marine helicopter squadrons currently employ this method of identification and it is reported to have proven very satisfactory."

15. Incident/Observations.

a. "USAF Prestrike Around Landing Zones. It has been determined that where any possibility of enemy contact exists on a heliborne assault, a prestrike of the area around the landing zone is mandatory. During this period, an extremely effective technique has been developed to exploit the shock effect of the prestrike in conjunction with assault landing. The usual prestrike available consists of two to four USAF A1E aircraft loaded with fragmentation bombs, rockets, and 20mm cannon. By coordination with the USAF Forward Air Controller the ground tactical commander, and the aviation unit commander, a landing zone time is selected. Dependent on the tactical situation and the aircraft and ordnance available, the prestrike starts anywhere from 15-30 minutes prior to landing zone time, and continues until the landing force arrives. At this point two to four A1E aircraft are pulled out of the prestrike and position themselves so that they can lead the helicopter formation into the landing zone with 20mm cannon fire on the approach path, sides of the landing zone and departure path of the helicopters. As the A1Es pull up and are clear, the armed helicopters accompanying the troop carriers pick up the fire and continue until the troop aircraft depart the landing zone, then the armed helicopters escort them to safe altitude. During the time the helicopters are in the landing zone area, the A1Es strike likely enemy positions approximately 500 meters around the perimeter of the landing zone. This technique provides continuous fire around the landing zone from the time the prestrike commences until the first lift is on the ground and the troop carriers have reached a safe altitude. The troops on the ground then secure the landing zone for successive lifts. While this technique does not guarantee neutralization of a well dug-in enemy, it does maximize the shock effect of the prestrike and reduces enemy reaction time against the heliborne forces to an absolute minimum. In addition to the above, when artillery fire is available, it precedes the prestrike and then shifts to deny escape routes to the enemy."

b. "Utilization of Armed Helicopters. Such practices as providing continuous armed helicopter cover over vehicular convoys, making dawn and dusk patrols of the areas surrounding military compounds and providing continuous air cover over operational areas have



been curtailed to conserve available resources. Use of O1F aircraft for observation with armed helicopters on ground alert was established as a procedure to perform these missions and still provide adequate support. To date, this have proven very successful and resulted in substantial savings in flying hours on the armed helicopters."

c. "Helicopter Formations in Assault Operations. A continuing study and appraisal of helicopter formations in assault operations is conducted by this battalion. Several are used, with selection of the formation based on mission (combat assault, troop placement, extractions), LZ size, LZ orientation, intelligence on enemy dispositions, terrain, winds and armed helicopter escort capabilities. Formations used are: Vs of 3 in trail, Vs of 5 in trail, staggered echelon of 3s (left or right) and staggered trail. Where the LZ permits, Vs of 3 in trail permits good control and ease of coverage by the armed helicopters. When the size of the LZ is too small to accept an entire company, the elements (3 or 6 ships) are separated by 20 seconds. Normally 1 or 2 minute intervals are placed between companies to permit the armed helicopters of each succeeding company to pick up the cover from the preceding company. Vs of 5 are used in large LZs where large numbers of troops can be landed quickly. Staggered echelons are used where, due to wind or terrain, the orientation of the LZ is wide, but shallow in length. This permits echelons of 3 to land next to each other. Elements and companies are separated by the same intervals previously described. The staggered trail is used in long narrow LZs such as a road, or in small LZs which will only take 1 or 2 helicopters at a time, or during an extraction where this formation provides an easy loading configuration for the ground unit. Careful briefing, planning and continued practice contributes to ease of control and reduction of confusion."

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## Section IV

### Enemy Tactics

#### 16. Incident/Observation.

"The opinion that the Viet Cong(VC) is an untrained Army of insurgents is not entirely true. In many areas we find that he is well trained, organized and equipped for his mission. He employs the tactics of the guerrilla in many localities because he is relatively weak and has no other choice and because the terrain favors guerrilla tactics. In many cases enemy forces are uniformed, their weapons are modern and effective and he has both combat and combat support elements. His organization is generally triangular in concept with regiments, battalions, companies, platoons and squads. During operations he employs mortars, heavy machine guns and recoilless rifles within the military boundaries designated by his higher headquarters using the ambush and the mass, human wave attack as his principal tactics. If cornered he will fight, but more often he will break into small groups and melt into the jungle to fight again another day. He travels with his family on occasion and is not above having women and children cover his withdrawal, leaving them to fend for themselves. If given a choice he will do most of his fighting at night, moving during darkness, and tunneling under hills to live and store his caches. He uses mines and booby traps extensively around his base area and normally will not come out to attack unless he enjoys a five or six to one superiority. A favorite tactic is to launch an offensive against an isolated post to draw the friendly forces into prepared ambush positions along routes which he knows they must use or advance over to reach the beleaguered post. He is a foe worthy of respect -- but he is not ten feet tall, he loses battles so often that he must lose the war."

#### Lesson Learned

"Every soldier must strive to know the enemy respect his ability, but understand his weaknesses."

#### 17. Incident/Observation.

*as usual,*  
"The VC travel trails almost exclusively. Most areas are a series of complex trails and the guerrilla is usually familiar with all of the trails, thus facilitating his movement throughout the area. When

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he sets up a harboring site, it is normally somewhere close to fresh water. Draws at the base of a hill with water present are favorite harboring sites.

## Lesson Learned

"When conducting sweep operations, ambushes or saturation patrolling operations, particular attention must be paid to trails, draws, bases of hills and streams. Constant pressures can be applied to the guerrilla by hitting his harboring sites and keeping him off guard."

*If you can locate his harboring sites,*  
18. Incident/Observation.

*He*  
*can*  
*include*  
"The VC is a patient, well trained and experienced jungle fighter. He has proven to be quite ingenious. Mines and weapons have been found which were made by the VC. Claymore mines made by the VC are about 12-15 inches in diameter, 2 inches thick and weigh about 10-15 pounds. Filler for the mine consists of pieces of steel about 1/2 - 1/4 inch long. Weapons made by the VC to include shot guns and pistols have been captured. Fortified positions which he constructs show that he has the capability to construct fortifications which will afford him protection against air, artillery and mortar fire. The bunkers are well camouflaged and offer a small silhouette. They are constructed in a manner that affords him maximum observation to all sides. Tunnels are usually concealed by trap door which afford him protection against small arms fire and grenades. The tunnels are self supporting and are frequently 20-25 feet underground. The tunnels sometimes extend as far as 300 meters with tunnels branching off at acute angles. Branching tunnels at these angles, reduces the effectiveness of demolition used against them. He also constructs small tunnels off the main ones as decoys. Rooms are usually constructed off the main tunnel where the VC cooks his food, treats his wounded, and stores his arms and ammunition. The other tunnel entrance is often in a hut or an open field, providing an oxygen supply into the tunnel. When cornered underground and discovery is certain, the VC will eject a grenade from a hole or aperture and during the resulting shock and smoke, attempt to escape. Troops must be alert to spot these escapes after isolated grenade explosions.

"In the defense, the VC uses delaying forces to great advantage. If his base camp is attacked, the main body will immediately evacuate the camp taking as much of the essential items as possible. Small groups of 3 or 4 personnel will occupy camouflage positions to

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snipe at the attacking force, giving the main body time to withdraw. One means which the VC uses to provide himself early warning of approaching troops is to place branches or twigs across the avenues of approach. When he hears the branches and twigs snap he knows it is time to move. Being well acquainted with the jungle, he is often able to make good his escape.

"His offensive actions against this unit to date have been small unit actions; he has not attacked in significant force.

"Small unit actions include sniping and ambushes. The main tactic used by the VC when sniping is to fire a few single sniping rounds then wait for return fire. When fire is returned he picks out the positions where automatic fire came from and concentrates fire on those positions. Automatic and crew served weapons are the primary targets of VC attacks. VC ambushes are generally of two types; L and V shaped. When contact is made with the lead element, the point is ambushed, then they open fire from the sides and close the trap.

"Actual offensive attacks usually are made with the purpose of capturing or destroying an automatic or crew served weapon. After an attack, VC usually withdraw along the same route over which they attacked. The purpose is to police up their equipment and personnel.

"The VC has proven very adept at laying mines and positioning booby traps, many of which are home made. Captured artillery or mortar duds are also effectively used as booby traps. Punji pits are used along trails, however they have had little effect.

"Though armed helicopters and observation aircraft will often draw VC sniper fire, a favorite target for snipers are resupply ships and medical evacuation aircraft."

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## Section V

### Basic Tactics Friendly Forces

#### 19. Incident/Observation.

##### Artillery Liaison.

"An additional artillery liaison team is required at area FSCS for rapid coordination of the fires of US and ARVN Artillery and obtaining air clearances. This will eliminate the use of an interpreter at lower levels of command.

"A direct line to area FSCS.

"For sustained twenty four hours operations, liaison sections should be supplemented with one additional man.

"Due to the liaison section vehicle being implaced on a semi-permanent basis with communications equipment, the section equipment should be supplemented with a 1/4 ton truck.

"The semi-fixed installation of communications equipment and the requirement for sustained twenty four hour operations, necessitates a method of furnishing power to radios other than running the vehicle or a 1.5 KW generator. The utilization of a rectifier is recommended."

#### Reference.

*Rectifier provides commercial electricity to be used. But emergency power must be available if commercial power fails.*

Chapter 2, FM 6-121, "Field Artillery Target Acquisition."

#### 20. Incident/Observation.

a. "When moving a company or larger unit, never move out of range of mortar or artillery support. *use of supporting fires.*

"Utilize Army air and air force cover when making tactical moves. Have air cover controlled at the lowest practical level, usually battalion.

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"One means of effectively combating enemy snipers during movement is to "walk" artillery fire ahead of the moving unit.

"When moving across major defiles and large streams it is mandatory that the far side be secured before proceeding with the main body, or an accordion effect will take place within the column.

*Discussion, forward front - consider range of enemy snipers.*

"During vehicular moves, interval between vehicles must be maintained. If the interval is too great civilian vehicles or oxcarts may get in the column thereby splitting the convoy and making it susceptible to ambushes. Personnel with automatic weapons should be at each corner of the vehicle to provide security and lay down an immediate base of fire should the vehicle be ambushed. Troops traveling on vehicles should face to the outside to provide more security. Don't overload vehicles. 20 to 25 men in a 2-1/2T truck should be maximum load when enemy action is possible.

"A method that this unit has used to resupply water is to insert a water proof bag into a duffle bag, each bag will contain approximately 11 gallons of water. The bags can be set down or dropped from a low level with a minimum loss of water. Being much lighter than water cans, the bags can be carried if they are not lifted out after resupply is completed. Consideration should be given to developing a collapsible water container of this type."

*we had collapsible containers in parachute units in 1942.*

b. "In overall operational planning it must be kept in mind that operations in Vietnam should, in only exceptional cases, be planned according to a binding time schedule. The terrain in Vietnam makes this impractical. Planning according to a tight schedule sacrifices the effectiveness of the operation as well as the security of the unit. For planning purposes, a unit moving through thick jungle with heavy undergrowth, while executing a thorough search, might average 300 meters per hour. By trying to follow a rigid time schedule and move at a rapid pace, security of the unit will be sacrificed, making the unit more prone to sniper fire and ambush."

## References.

Paragraph 42, FM 31-30, "Jungle Training and Operations."

Paragraph 109, FM 31-16, "Counterguerrilla Operations."

Paragraphs 26 and 40, FM 31-60, "River Crossing Operations."

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21. Incident/Observation.

"Night infiltration of the "anvil" units to block positions proved very effective during "hammer and anvil" operations. It was felt that movement of these units into position during daylight hours would have disclosed the type of operation, thus providing the enemy with an opportunity to elude the trap.

"The use of dummy landing zones to the rear of enemy units during operations frequently deceived the enemy into abandoning prepared positions. Preplanned artillery and air strikes thereupon proved highly effective against enemy troops in the open.

"Saturation patrols using squad and platoon-sized elements effectively dominated large areas, denying the enemy any opportunity to operate therein without being detected and destroyed.

*and supporting artillery & mortar fire.*

"The principle of defense through offensive operations proved highly successful. Company and battalion-sized operations, in addition to aggressive small unit patrols, kept the enemy off-balance to such an extent that no coordinated attacks larger than platoon size were initiated against the unit during the period.

"Frequent changes of defensive positions, a diversity of offensive operations, and prompt, aggressive reactions to enemy attacks by "eagle flights" proved most successful. Recurring patterns of operations, both in the defense as well as the offensive, must be avoided at all costs in counterinsurgency operations.

"All units conducted local patrolling around their perimeters to clear the areas and insure an adequate defense."

References.

Paragraph 104, FM 7-11, "Rifle Company, Infantry, Airborne, and Mechanized."

Paragraphs 84 and 70, FM 31-16, "Counter guerrilla Operations."

Paragraphs 64c(1) and 93, FM 31-30, "Jungle Operations."

22. Incident/Observation.

"Communications facilities are first priority targets. First round hits all but destroyed our ability to communicate effectively,

except on a make-shift basis. Communication facilities will be placed underground and alternate facilities (with HT-1 and PRC-10 Radios) will be provided. It must be accepted that the VC have detailed knowledge of our camps to include vital facilities, fortifications and heavy weapons and emplacements.

*Supplementing as well as alternate plans needed.*

### Lesson Learned

"In order to off-set this disadvantage, heavy weapons (mortars and machine guns) must be constantly relocated to alternate positions after darkness, even at the risk of exposing the crews."

### Reference.

Paragraph 131, FM 24-18, "Field Radio Techniques."

### 23. Incident/Observation.

"A company sized force moved out at midnight, its objectives to secure an airfield for a survey party arriving the following morning to reopen a camp. The troops found movement extremely hazardous. The road itself was cut in innumerable places by deep trenches and pits, the bottoms of which were lined with punji stakes. Booby trapped logs were buried at an angle in the road bed, at strategic points, their sharpened ends pointed gut high for the unwary soldier. Paralleling the road on both sides were wide belts of razor sharp punji stakes. Broken blocks of concrete and smashed wood marked bridge locations used to span streams along the route. After six hours of movement, the patrol finally reached the district town, accomplished its mission by 1500 hours the same day, and began the trek home. The exhausted soldiers reached their destination at 2200 hours that evening, having fought VC snipers and ambush parties all along the return route adjacent to the road. The reconnaissance, and flank security elements reported that the villagers along the road were hiding VC snipers in the villages, helping the Viet Cong cut the road, lay punji stakes, and acting as bearers in VC carrying parties. Some villagers, detained for questioning, admitted that they were helping the Viet Cong but claimed that they were being forced to comply with Viet Cong orders under gunpoint. Their complaint was that no government troops were around to protect them."

*hard choice*



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## USCONARC COMMENT

The above extract is quoted as an example of the terrain over which a patrol may have to operate and the type problems and obstacles it may meet with.

### 24. Incident/Observation.

"The system of patrolling used on an operation was platoon patrolling within an allotted sector working from a company base, which acted as a night strong point and a resupply point if required. The aim was to search out and destroy the enemy in the battalion area of operations. The effect of this system was that the Viet Cong encountered could, and did on some occasions, run into other patrols in the sector. There was no obvious route of movement, and the general axis changed continually within both the battalion area of operations and the company sector. This system also enables a company to concentrate rapidly in order to search large installations or if the enemy threat increases.

"Movement must be slow enough to enable an effective search to be conducted but not so slow as to allow the VC to take advantage of it.

"In almost all cases the VC encountered during this operation offered only a fleeting target. Weapons must be kept at a ready and all shots should be fired from the shoulder for better accuracy.

"During this operation the 9mm round proved to be ineffective. The round wounds but not severely enough to prevent further action on the part of the VC unless a vital organ is hit.

"Camouflage cannot be over emphasized. Most casualties sustained were personnel with no camouflage or without a bush hat.

"Artillery fire cannot destroy the deep enemy installations but can give effective neutralization.

"Bombing does not destroy the deep enemy installations unless a direct hit is obtained.

"With a more careful selection of items from the US "C" rations, three days rations can be carried by the individual soldier.

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"Best resupply time as far as weight is concerned is during the morning. The lifting capability of the helicopter will decrease in the late afternoon. Resupply should be taken on the move when possible for security reasons. Recent bicycle tracks revealed that the VC warning system uses the main trails into the war zone to inform the VC in the area of an approaching force. This early warning enabled most VC to leave the area, leaving only those who are responsible for tracking unit movements maintaining the installations in the area. To achieve surprise, the early warning system must be cut. The largest VC force encountered was approximately 10-15 personnel who were caught from the rear at an ambush site they had established at the junction of two trails.

"The VC were confused by:

"The method of patrolling

"Continued large variation in axis of movement by sub units.

"The major swing South from a previous general axis of East which caught many of the VC off guard in the southern sector of the tactical area of operations.

"Many VC had not been warned by the early warning system. This was probably due to the confusion caused by the units directional changes.

"To successfully search out and destroy the VC in an area of such large size requires a large number of troops. The area must be effectively cordoned off so that the VC cannot get out before the search force is introduced. Then it will make no difference if the VC are forewarned.

## Lessons Learned

"Do not travel on trails in the jungle. Movement parallel to but off the side of trails will avoid almost all ambushes and villages and caches will still be discovered.

"Training in immediate action drills and shooting at fleeting targets must be stressed.

"When possible block all avenues of escape to the VC before entering an area for a search and destroy operation.

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"All units operating in RVN should be issued the M-16 rifle. This weapon is light and easy to handle in the jungle and is very effective for disabling the enemy even if he is only wounded."

## References.

Paragraphs 81, 84 and 147, FM 31-16, "Counter guerrilla Operations."

Paragraph 40d(3), FM 31-30, "Jungle Training and Operations."

## 25. Incident/Observations.

a. "The separate platoon is usually most successful in closing with the enemy. Supporting fires must be planned in detail and a reserve reaction force must be available on short notice. Such operations require the highest caliber of leadership at the platoon level. Where the situation permits, a small operational force is preferable to a large one. Selection and training of small unit leaders is a must."

b. "This report makes no mention of the combat role played by the junior leaders within the company. The rapid reorganization and stubborn defense conducted in the face of confusion and intense hostile fire was made possible only through the determined and courageous efforts of the junior leaders."

c. "This is a company commanders and platoon leaders war. Even Brigade sized operations ultimately break down to semi-independent company and platoon sized actions. Platoon leaders are required to act far more independently than in a "Conventional" war."

## Lesson Learned

"Fighting in areas of close visibility and at night places heavy demands on the qualities of leadership of platoon and squad leaders, who can by their immediate reactions influence the battle decisively."

## References.

Paragraph 49, FM 31-30, "Jungle Training and Operations."

Paragraphs 75, 76, FM 7-15, "Rifle Platoon and Squads Infantry, Airborne, and Mechanized."

Paragraph 145b, FM 31-16, "Counter guerrilla Operations."

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26. Incident/Observation.

"Vietnamese dog teams have proven to be a very effective attachment to a unit participating in an operation, particularly on patrols and searches of villages and tunnels."

Reference.

Subparagraph 66c(2)(b)1, FM 21-50, "Ranger Training and Ranger Operations."

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## Section VI

### Knowledge of Current Use of Weapons and Equipment

#### 27. Incident/Observation.

a. "Unrecorded minefields are found in many parts of Vietnam. Some have been put in by the French and other by the Viet Minh or the VC. The result is a mixture of unrecorded mines with no identifiable pattern. This unit has encountered too many minefields, isolated mines, and booby traps to be handled by the organic engineer company."

b. "An effective field expedient for clearing minefields is a grappling hook tied to a length of rope."

*works fine after you locate each individual mine. Old mines are held in place by roots and earth. Mine grappling in a field several will, grass and brush is a waste. Probing is necessary.*

#### Lesson Learned

"The task of disarming mines and booby traps belongs to all combat troops, and cannot be regarded as solely an engineer responsibility."

### USCONARC Comment

In cases where the density and complexity of the minefield precludes rapid neutralization, the area should be clearly marked to permit the minefield to be thoroughly cleared when time permits.

#### References.

Paragraph 63, and Chapter VI, FM 5-31, "Use and Installations of Boobytraps."

Paragraph 312, FM 100-5, "Field Service Regulations - Operations."

#### 28. Incident/Observation.

"Safety programs in CONUS are directed primarily toward traffic safety and range safety. These programs did little to prepare the individual soldier for living in an armed environment. Several serious accidents have occurred due to the accidental or thoughtless discharge of firearms."

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## Lesson Learned

"Safe handling of weapons is a prerequisite; safety regulations are a necessity, but they must not be interpreted so literally as to prevent the individual soldier from learning how to handle his arms in a safe manner on operations."

## USCONARC Comment

To survive in an area such as Vietnam a soldier must have his weapon and ammunition ever ready for immediate use. Throughout history when green troops are first committed there have been firearm accidents primarily due to nervousness and uncertainty. A soldier cannot be restricted in the use of his weapon in a combat situation. Commanders must therefore make every effort to condition the man mentally for combat to prevent such accidents by instilling self confidence in the handling of weapons. *Men must learn to handle loaded*

*Weapons in training. Even blanks will focus attention*  
Reference. *on careful handling.*

Paragraph 1, AR 385-63.

29. Incident/Observation.

"Several shotguns were borrowed from the US Army by the Marines, and evaluated on patrol operations. In one particular encounter with a VC unit, the shotgun carried by the squad in contact delivered immediate devastating fire which accounted for two to four dead VC. Additionally, it has proven its worth on the patrol point.

*Ammunition is extremely heavy. Plastic or brass shells must be used because paper shells absorb moisture and*  
 Lesson Learned *swell.*

"Shotguns have proven to be excellent counter guerrilla weapons. Commanders should consider the use of shotguns in the squad."

Reference.

Subparagraph 91(g), FM 31-30.

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## 30. Incident/Observations.

"The M-26 fragmentation grenade has produced a 50% dud ratio when used under damp conditions. The fuse becomes wet and will not detonate the grenade. This has been solved to some extent by melting wax around the fuse to waterproof it. Grenades which do not detonate are used by the VC as booby traps."

*This is a manufacturing problem.*

## 31. Incident/Observation.

"Many of the casualties sustained by this Brigade in operations thus far and much risk to civilians in the area of operations, could have been avoided through the use of riot agents. The use of riot agents would serve to incapacitate the VC long enough for US troops to get to them, it would provide a good tool for flushing the numerous underground fortifications that this unit has encountered. It would increase the proportion of prisoners captured and it would prove invaluable for use when the VC use civilians as a shield. Finally, it would materially reduce the number of US casualties sustained on offensive operations.

"Recommend that the authority to employ riot agents be delegated down to commanders of battalions or larger units."

*platoons.*

## USCONARC Comment

COMACV has authority to use agent CS, as proposed above, where necessary. A companion DA project to the use of Agent CS in tunnel neutralization, utilizing acetylene gas to destroy tunnel complexes, is scheduled to be demonstrated shortly in Vietnam.

## References.

Subparagraphs 5-9(c) and 5-43(c), FM 61-100, "The Division."

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## Section VII

## Individual Inquisitiveness and Alertness

32. Incident/Observation.

"In areas of limited landing zones where the VC have the capability to establish an ambush at all or most landing zones, it may become necessary to employ ground reconnaissance units to determine the suitability and enemy situation, and to physically secure the landing zone for the initial troop lift. During the execution phase of an operation, reconnaissance and intelligence gathering should be continuous in the operational and landing zone area. Upon receipt of additional intelligence, timely use should be made of it by having contingency plans developed for the commitment of reserves, the utilization of strike aircraft and supporting weapons, and the action of friendly troop units on the ground."

## Lesson Learned

"Concentrated effort is needed to develop an effective intelligence gathering system. This system should take advantage of facilities and means available, to include aerial observation, airborne radar, infrared surveillance equipment and above all, vigorous patrol actions. The gathering of intelligence is worthless unless the information is passed to interested units and commanders must be prepared to react quickly to obtain the maximum effect for the information gained."

References.

Paragraph 32-35, FM 7-30, "Infantry, Airborne, and Mechanized Division Brigades."

Paragraph 17, FM 7-15, "Rifle Platoon and Squads Infantry, Airborne, and Mechanized."

Paragraph 90, FM 30-5, "Combat Intelligence."

Paragraph 59-62, FM 31-30, "Jungle Operations."

Chapter 6, section VII, FM 31-16, "Counter guerrilla Operations."



33. Incident/Observation.

"The primary cause of excessive loss and casualty rates in the conduct of airmobile operations is often times the result of a compromised operational plan. This compromise can either be the result of a determined effort by the Viet Cong intelligence gathering agencies, the infiltration of ARVN units by Viet Cong sympathizers, or carelessness on the part of planners in the use of communications means and physical security of classified documents. In order to reduce the chance of compromise of an operation to a tolerable level, several things should be accomplished. Operational planning must take place in a secure area with access to plans and planning areas limited to a strictly "need to know" basis. The time lapse between planning and execution should be sufficiently long to allow for detailed planning, but not so long as to increase the possibility of compromise beyond acceptable levels. With the increased VC capability for surreptitious monitoring, communications security should be rigidly enforced. Of equal importance with the security of operational planning is the validity and timeliness of intelligence that is used to develop the plan."

## Lesson Learned

"In the planning and conduct of operations, the security of operational plans should at all times be of paramount importance. Combat intelligence and the timely reaction to this intelligence is often inadequate at best. Enemy capabilities need to be accurately determined with respect to location, size, armament and reinforcement. Contingency plans covering likely landing zones and operational areas should be thorough and continuous, commensurate with the requirement for reducing unusual activity in a prospective operational area to a minimum."

References.

Subparagraph 108c, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 90, FM 30-5, "Combat Intelligence."

Paragraphs 127 and 128, FM 24-18, "Field Radio Techniques."

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## 34. Incident/Observation.

### "Reaction to Intelligence Information:

"The most significant military action of the reporting period in which prompt reaction to intelligence directly influenced the success of the operation was an ambush. A company, acting on timely intelligence of a VC victory celebration, set up a double ambush against a force of 30 VC which was moving along a trail towards a village. The ambush was established on the two avenues of approach to the village. As soon as the VC security element moved to join the VC main body, the first element of the company opened fire. Within a matter of seconds, 20 VC had been killed and when the remainder (10 VC) attempted withdrawal from the ambush site, they were caught in a killing zone of the second element of the company. This action resulted in 30 VC killed in action."

### USCONARC Comment

The above extract provides a good example of correct reaction to intelligence about enemy activities. *and a hell of a lot of good fortune!*

### Reference.

Paragraph 90, FM 30-5, "Combat Intelligence."

## 35. Incident/Observation.

"Do not start or spread rumors."

### Reference.

Subparagraph 42(d), FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

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Appendix II

Stability Operations

36. Incident/Observation.

"Contingency plans did not provide sufficient intelligence as to the locations of key installations. Maps initially provided were outdated and those of towns and cities were of too small a scale."

Lesson Learned

"Contingency plans in support of stability operations need to include detailed tasks covering the seizure or protection of key installations (e.g. bridges, embassies, radio stations, airfields) and protection of essential services (e.g., ports, waterworks, government offices, prisons, police stations, subways, sewers, etc). The seizure or neutralization of both military and political installations must be considered in the preparation of plans for stability operations. Map coverage of areas covered by contingency plans require periodic review for updating, and maps covering towns and cities should be of a scale no less than 1/10,000. Where possible map coverage should be reinforced by aerial photography. Contingency plans need to be imaginative, and must take account of religious, economic, psychological, political and humane aspects to a greater degree than normal."

37. Incident/Observation.

"Contingency plans did not take sufficient account in planning for the vast communications requirements involved in stability operations performed by joint forces in a friendly country, nor was the jamming of standard broadcast or telecast bands envisaged."

Lesson Learned

"Good communications are essential to the success of stability operations. Contingency plans in a friendly or neutral country must include provisions for high volume communications channels between Army, Navy, Air Force, and State Department elements in the operational area, and a direct capability between the joint operations commander and the JCS. Planning should include the capability of jamming radio broadcasts by insurgent forces."

38. Incident/Observation.

"Training for limited and general war is adequately covered in existing training directives. There are areas which require additional training emphasis for stability operations covering the use of troops in a friendly country, and how to operate in a built up area."

Lesson Learned

"Areas of training requiring special emphasis by any unit preparing to support a contingency plan to operate in a friendly country include:

- Fire discipline and control.
- Riot control and civil action.
- Communications.
- Combat in cities.
- Surveillance operations.
- Map reading and land navigation.
- Use of night illumination devices.
- Language training and area orientation.

References.

Paragraphs 55-61; 140, FM 31-16, "Counter guerrilla Operations."  
Chapters 2 and 4, FM 19-15, "Civil Disturbances and Disasters."

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## Appendix III

### Individual Battle Experiences

"It was at the break of dawn the morning of March 10. 6 o'clock and all h--- broke loose on Hill 260 in our sector. All of our communications were destroyed, wires were cut and the enemy interfering at all times on our radios. After being on guard all night with nothing but the rustling of trees or rats rummaging through the brush we thought. But it wasn't that, it was the enemy as sly as a fox or rat, infiltrating into our lines. I woke Sergeant Ford, our mortar observer, at 0545 to take up guard telling him about the disturbances on our right, and to be especially alert. No sooner did I lay down after a jittery night on guard when Sergeant Ford woke me and Kirkland, another of our observers, and said that the enemy were on top of us. We rushed out and sure enough they were there. Immediately we pulled the wire attached to our thermit grenade to give us light, for it was a misty day. Seeing the enemy come up, Sergeant Ford pulled another thermit grenade. The enemy surprised our listening post on our right, killing one boy. The other was asleep and the enemy started clubbing and stabbing unmercifully. The boy at the listening post was yelling 'Leave me alone'. Edwards, one of the infantry boys, levelled his rifle towards them, but was scared to fire for fear of hitting our boy. I told him to shoot anyhow as they were killing him. He fired and we saw them fall. It quieted down then. Immediately two enemy crept within eight feet of us, -25 caliber rifles aimed at us. Sergeant Ford acted fast with a hand grenade. Whether he pulled the pin or not we do not know, but he hit him smack on the forehead; what a wallop - for it knocked him out. The second enemy was about to fire when I put a grenade, that I pulled the pin on, and did short work of them. While this was going on, one of their machine guns opened up and got Kirkland. I was unaware of this. Ford says 'Look George, - they are coming our way!' They were coming under a tree, that was about 150 feet high and about six feet in circumference. They had quite a few guns firing at us. We quickly started lobbing hand grenades at them. Me and Ford threw about 25 grenades in all. We had them sowed up in this pocket. After 25 grenades at 15 to 20 of them, we saw only one get out. Some tried to get out and were hit or killed; and those that were not - wished the h--- they were. A column of them started coming at us at the foot of the tree. I grabbed my carbine - it was on safe - so I threw it down and grabbed my sub-machine gun and quickly emptied 2 full 12 round clips of 45's at them. The enemy were falling down, but they just walked over their dead and kept coming. Thinking we had a machine gun, they changed their minds

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and, respecting our fire, withdrew behind the tree. All our grenades were expended and we had no more clips of 45's, so we had to take to our pillbox, me Ford and Edwards, for their machine gun fire and sniper fire was more than we could stand. How we missed getting hit is a mystery to us. Once in the hole the artillery opened up. Thinking it was ours we were happy, but not for long - for it was enemy mortars. The first shot hit the Observation Post tree, knocking down a limb the size of a tree which fell between our dugout and the dugout to our left. Edwards was on guard at the door, with me and Ford covering the sides. A snipers bullet hit Edwards on the left of his temple. Edwards spun round, laid down on my cot, gasping for air. I grabbed my khaki towel and put it around his head. He died in a few minutes without saying a word. It was the first time we had seen a man killed in front of us, and brother, me and Ford really got scared. The next shell landed in the back of our hole, caved it in, and shifted our roof. The third shell was a direct hit. Say! It was getting hot here. As jittery as we were, we knew one thing - we had to get out of that pillbox. Me and Ford shook hands and said goodbye. I asked Ford if he came out of this alive, to send my Mother some necklaces that I had strung. The men from the other dugout started throwing us notes telling us that they were shot and to come over. Snipers started climbing trees like monkeys. Ford started cutting brush between the two dugouts, but the enemy machine gun fire and sniper fire was fierce. That didn't stop Ford or me, for we knew we had to vacate that hole. As heavy as the fire was we still kept cutting through. Ford hit an ants nest, and it was agony, for they really bite. Ford took a rope so if he got through, he could pull some of our ammunition and water to the wounded men. He made the run through all the machine gun fire, and got through. Ford was over in the next hole, leaving me and Edwards, the dead boy, alone. I looked to my right at three enemy coming at me. I opened fire on them and saw them fall down and roll off the hill. The fourth, whom I didn't see, threw a hand grenade at me and hit one of the logs on the side of the dugout, and knocked me clear through the door. I thought I was hit and blinded. I felt my face for blood but there was none, only a lot of dirt in my eyes. The smoke from the grenade filled the hole, but I got back to my post. There were no enemy in sight. Then I knew I had to get out of my hole for damn sure. The enemy were hollering and yelling, and clicking their bolts to draw our fire. I loaded my pockets with about 300 rounds of 45 ammunition to anchor me to the ground so when I made a run to the other pill box my belly and butt would be very well to the ground. I was like a sunken lead weight. My mind resolved, machine gun fire as bad as it was I took it on high and made it. Thank God! My face lit up when I saw the other boys. There was five of us now with Kirkland wounded and out of action. The two other boys,

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though they were hit, were not badly wounded. The situation was now much better and we had more fire power. There was a grenade pit about six feet above us with two men in it, so we made up our minds to tunnel through to them. The two boys started at their end and using nothing but a knife and our fingers we had the tunnel through in due time. The enemy killed our observers in the OP tree and started climbing up as fast as they could. They set up their deadly machine gun behind the tree quickly and then it was h---. Three of them finally got up on the OP tree and raised hell with our front lines not more than fifty yards away. I have to give them credit, for they knocked out our radio men and ammo men, and what else I don't know. It left us trapped now in enemy lines. What a joke. We were getting more jittery all the time now. One enemy started challenging our boys to come in the open and fight. He said there was only 300 of them and to come out and fight. They kept coming and yelling. Our machine gunners played wise, waiting until they saw the whites of their eyes, and let them have it. I didn't hear that one challenging us any more, so if he said there were 300 of them, I knew now there were only 299 left. The enemy are good soldiers. They know every trick of the game. They use very good camouflage. They do not fire unless we fire. When we do fire it is hard to know where they are. That's why its hard to say how many we have eliminated. One thing I always will give the enemy credit, no matter how great our artillery fire or our machine gun fire, they come and get their wounded and dead out. That's why it's hard to say how many we have eliminated. Once we had the hole plugged we felt secure for the time being. We found out that an infantry company was coming up the back trail to help us out of this pickle, and were happy and glad for we thought we had been forsaken. Night was creeping up. About five o'clock it started raining and we started cursing, for that's when the enemy are at their best. They attack on a dark and rainy night. We heard plenty of firing. It was the Inf Co and an automatic rifle Co. They lost a few of their men, expended their ammunition, so they had to fall back for it was getting dark. We should have gotten out then, but as luck would have it, we never thought of it, so our hopes were gone. Night fighting in the jungles is awful, but fate gave a full moon, and that was very good. All of us boys resolved to go out fighting if the worst came. We had to have sleep, so two stayed on guard at all times, but none of us could sleep for we'd had an awful day. What we would have given to have been someplace else, I'll never know. The enemy kept creeping on us all the time during the night. I relieved Ford at guard at the hot corner, it was 0800. Three of the enemy were right on top of us and one fell through the crust of the tunnel. The infantry Sergeant asked him his name, a rassword. He could not answer. He was halfway in our hole. When he didn't answer I told the sergeant

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to fire. He said it may be one of our boys. I said fire and be dammed. He finally fired one round through his leg or between them, for I saw the slug going into the grenade pit, where the two boys were. I then opened up and let him have it with six 45 rounds. He pulled out of the hole, fell down and rolled down the hill. The second lifted the top off the roof and fired four rounds close to the wall alongside my back, missing me, and the third one said in plain English, 'Let him have it'. That's just when I gave him the six other rounds out of the clip and he joined his friend - rolling down the hill after him. The third threw two grenades into our pit, seriously wounding the two boys. They screamed for they were badly hurt. Me and Sergeant Ford went into the grenade pit and dragged the wounded to our hole. We quickly sand bagged the tunnel in case the enemy slipped any more grenades into the pit. The pillbox we had was about 4 feet high and was about 1-1/2 feet at the lowest. It was about 5 by 8 so we were cramped badly for space. The wounded had to be laid out. We could only sit with our legs up to our stomach. The enemy use smokeless powder so you can't see their muzzle blast. They do everything to draw our fire, for our muzzle blast gives us away. All the night they kept trying to knock us out, but no soap. About one o'clock in the morning two got right on top of us ready to fire in our hole. Ford was ready to heave a grenade, but he was afraid he wouldn't clear the opening, and was afraid it would go off in our hole. I got up, pulled the pin, and let them have it. All we could hear was their deadly screams, and they yelled Pedro or something like that. Fearing some of the enemy got into the hole we had vacated, we lobbed four grenades into that hole, to be sure. They came up several more times during the nite, but they got to respect us. Finally day break. The wounded were taking it like soldiers, always trying to grin and not a whimper out of them for they were badly wounded, they kept going on. What guts to suffer as those boys were suffering. About 8 o'clock that morning our 60mm Mortars went to work and the shells fell right in the enemy bivouac area. These 60mm mortar men can fire in my backyard and hit a dime every time. Confidence was restored in us for behind us \_\_\_\_\_ Company, and a fine CO were at them again and hemming in towards the southeast ridge of 260. At night the enemy cut a hole in the OP tree for their machine gun, and it really took quite a few of our boys over the great divide. Our machine guns and BAR's were close to us, and their fire was music to us. Now what to do. If we stuck our heads out the enemy would mow us down. What a pickle we were in. The 60's kept after them, firing fine. About 12 o'clock the Co withdrew for they must have expended their ammunition again and lost heavily in casualties, as we later found out. The enemy got bold again and their push was on. They tried knee mortars on us and hand grenades, but we still held out. Twas about three in the

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afternoon, it started to rain, and we again cursed it, but it was to our advantage for we caught some rain water. We had to move the wounded to drier ground for our dugout leaked like a sieve. We were all spent after that miserable time. I just couldn't go any farther. I was down, but not out. I laid down trying to catch some sleep. Ford and the other boys on the ground. Kirkland, the first wounded - I'll admire him as long as I live - offered to pull guard so we could get some rest. What a man! Sergeant Ford and the infantry sergeant made up their minds to make a run for it for something had to be done. They said if they got through, they would get help to us. Away they went; everything opened up on them, so we figured they must have been killed. We waited another hour trying to cheer the wounded. I went to the hand grenade pit, but every time I yelled to get in contact with our BAR men, those enemy peppered the h--- out of me. Every time I got my head out of the hole, they peppered me some more. It seemed useless, but I got to screaming and yelling at the top of my voice to them. This time it was not in vain, for they answered. I told them to cover me with their fire, since I was making a run for it. They told me to keep my head and butt low coming along the side of the hill, and to come running. Kirkland, the wounded sergeant, offered to go with me. So we took it on high, and Kirkland, even though he was wounded, outdid me in no time. The colonel promised he would get Grank and the other two wounded boys out, at all costs, and he did keep his promise. Kirkland said his pain wasn't too great to walk even if he did strain himself, so the colonel told us to hurry down the backtrail with the walking wounded. I mean hurry too, wasting no time. A battalion of infantry was now on the move towards the hill, so the outlook of the enemy was dismal. What a relief to be safe. I had the jungle rot all over me, and poison ivy all over my face and body when I went out on the 9th, but it was all cured when I came out for it was scared out of me. It's a sure cure, but please don't try it. They say its bravery, I don't know the definition for it, all I know is that I was scared and jittery. All I can say for our boys is that we deserve no credit for we're soldiers and this is our job.

### USCONARC Comment

This description of battle besides making interesting reading is a tribute to the American soldier. The events depicted might well refer to action in Vietnam today; in fact this is an extract from "Bourganville, An Experience in Jungle Warfare" by Maj Gen O. W. Griswold, US Army, 1943.

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The techniques required for operations in jungle areas only vary with the adaptation of means of making use of more sophisticated weapons systems, while the basic principles remain the same. Young officers will find the study of histories and books covering jungle operations provide factual background information which may often be useful in Vietnam today.      ~~SUCAD~~

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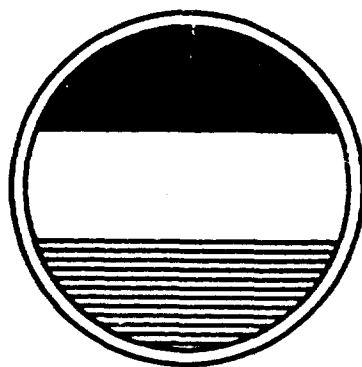
**USCONARC PAMPHLET**

**NO 350-30-3**

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# **EDUCATION AND TRAINING**

**OPERATIONS - LESSONS LEARNED**



**MARCH 1966**

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**HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND**

**FORT MONROE, VIRGINIA**

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CON Pam 350-30-3

## HEADQUARTERS UNITED STATES CONTINENTAL ARMY COMMAND Fort Monroe, Virginia

Pamphlet

31 March 1966

No 350-30-3

### EDUCATION AND TRAINING

#### Operations - Lessons Learned

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references to current training publications.

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2. General. Many lessons learned are being derived from operations in Vietnam, the Dominican Republic, major field exercises, and other pertinent sources. These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most of our doctrine is sound and is being correctly applied. This also indicates that in training certain principles must be continually emphasized and presented in such a manner as to insure full understanding and effective execution by units when the need arises.

3. Objectives. The objectives are to--

a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.

b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.

c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.

d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.

e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Orientation. The country of Vietnam varies considerably, ranging from open flatlands interspersed by rivers and canals to dense jungles and mountainous terrain. Headquarters, US Forces Vietnam have stressed the point that "tactics and techniques which prove successful in a given area may not render the same results in all sections of the country." This factor should be borne in mind when reading "Lessons Learned." It accounts for variances in comments from commanders in the field. It points up the continued requirement for flexibility and a readiness to adapt to the type of terrain so as to use it to the best advantage.

5. Application. Sufficient copies are furnished commanding generals, ZI armies and USAJFKCENSPWAR (Abn) to permit further

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distribution. In unit training programs, emphasis will be given to the close correlation of the contents of this pamphlet with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3 above.


6. Frequency of publication and numbering system. This is the third issue of a quarterly series, and should be read in conjunction with previous issues. Each subsequent publication will bear the same basic number, however, consecutive subnumbers will be assigned to each new issue.

(ATUTR-TNG)

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Appendix I

Lessons Learned, Combat Command Reports

Section I

Suggested Areas for Additional Training Emphasis

1. Incident/Observation.

"Proper installation of field wire and cable must not be forfeited for the sake of speed."

Lesson Learned

"Schools and units should stress proper field wire and field cable techniques as set forth in FM 24-20. Further, they should stress the point that speed of installation, although important must be secondary to the use of proper techniques."

Reference.

Subparagraph 46b(3), FM 31-30, "Jungle Training and Operations," 23 September 1965.

2. Incident/Observation.

"The monsoon season was a fine teaching point for engineer techniques. There were occasions when the conditions of the road network brought traffic movement almost to a halt. In consequence, construction effort was delayed of necessity to effect road maintenance. The severity of sub-tropical rains had been thoroughly planned for in work directives in spite of standard doctrine being utilized."

Lesson Learned

"Drainage in construction doctrine must receive additional emphasis, particularly for areas in which seasonal rains can hinder production requirements. Drainage design for projects in this theater must be more extensive."



Reference.

Paragraph 110, FM 31-30, "Jungle Training and Operations,"  
23 September 1965.

3. Incident/Observation.

"All US Infantry units committed to Vietnam during the past year have arrived in country without any organic long-range reconnaissance capability. However, to be most effective in this war, infantry units must have this capability. Small groups of men, working on the ground, off the trails, can locate Viet Cong and PAVN soldiers when and where other intelligence agencies cannot."

## Lesson Learned

"A unit has recommended that US Infantry units programed for deployment to Vietnam be directed to organize and train personnel for long-range reconnaissance prior to their commitment into the combat zone."

## USCONARC Comment

Portion of paragraph 25, FM 31-18, "Infantry Long Range Patrol Company," is quoted:

"Intensive specialized training conducted prior to the time the division or smaller unit is employed in active operations is mandatory if provisional LRP's are to accomplish long-range reconnaissance operations."

Graduates of the Ranger School are particularly useful in conduct of this instruction.

References.

Paragraphs 3 and 4, FM 31-18, "Infantry Long Range Patrol Company."

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## Section II

### Training in Theater

#### 4. Incident/Observation.

"Training emphasized by a unit program included:

"(a) Individual training on quick-fire reaction

"(b) 81mm mortar training."

#### USCONARC Comment

Portion of subparagraph 37a(1)(a), FM 31-30, "Jungle Training and Operations" is quoted:

"Combat will usually be at extremely close ranges, well under 50 yards. Thus, the soldier must react almost automatically to unexpected developments; this adjustment must be rapid, and it must be accurate. Rapid and accurate firing reaction may overcome initial enemy advantages."

#### Reference.

See subparagraph 4b (Lesson Learned), appendix IV, CON Pam 350-30-1.

#### 5. Incident/Observation.

"A report has indicated the requirement for a training program to be initiated to instruct US Forces observer personnel in navigation, artillery and naval gunfire adjustment, forward air controlling, route reconnaissance, and aircraft radio procedure. It has been noted that USMC observers who have flown with members of this unit have been exceptionally proficient in the above areas. These personnel have been thoroughly trained in a ten (10) week course of instruction conducted by the USMC."

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## USCONARC Comment

AR 95-51, "Aerial Observer Training" covers the existing training schedule for ground and air training of Army aerial observers. The training schedule covers some 64 hours of general instruction and is followed by 20 hours of flying instruction.

### Reference.

Subparagraph 82c, FM 6-20-2, "Field Artillery Techniques,"  
8 January 1962.

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## Section III

### Joint Operations and Procedures for Airmobile Operations

#### 6. Incident/Observation.

##### Target Acquisition.

"a. All observed fires were adjusted by aerial observers, either organic or Air Force FAC. Ground observers generally have not been able to locate artillery targets because of the nature of the enemy and terrain until friendly elements are at too close a range to employ artillery without sustaining friendly casualties. They have adjusted fires in coordination with aerial observers and, in some cases, by sound. The vast majority of artillery fires have been unobserved H and I and on suspected enemy locations with no surveillance. Because of this situation, the need for more aerial observers and aircraft is evident.

"b. In addition to its mortar locating capability, the radar section has been used frequently to conduct high burst registrations. A lack of target area survey and identifiable points both on the ground and on the map make registration points difficult to locate. High burst registrations using radar have given this battalion the capability to deliver accurate fire over a wide area, frequently 6400 miles, while expending minimum ammunition on registrations."

##### Reference.

Chapter 7, section V, FM 6-20-2, "Field Artillery Techniques," as amended.

#### 7. Incident/Observation.

"LZ Selection. Experience indicates that troop landings for search and destroy operations should begin, when feasible, on high ground and extend toward blocking forces located at the base of hills."

#### Lesson Learned

"The down movement conserves the strength of personnel and at the same time allows for complete coverage of the terrain. Moreover,

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this procedure attacks prepared enemy defensive positions in their rear when they are primarily sited to defend against attacks coming up the hill."

## 8. Incident/Observation.

"The pathfinders are particularly useful in directing the aircraft into and out of the LZ between enemy and friendly fire, both day and night. The pathfinders are equipped with beacons to assist in night resupply and are also used as a reference for USAF flare ships at night operating in support of tactical operations."

## Lesson Learned

"Experience indicates that pathfinders should always be included in the initial lifts into landing zones to assume functions of navigation assistance and landing zone control."

## References.

Chapter 4, FM 58-38, "Pathfinder Operations," 21 October 1963.  
Appendix III, FM 57-35, "Airmobile Operations."

## 9. Incident/Observation.

"Because of the airmobile concept, personnel and equipment are reduced to the minimum essential to accomplish the mission. Command and control element accompanies the firing batteries and consists of three 1/4 ton vehicles and the Battalion Commander's vehicle. Personnel are limited to approximately twenty-five and include the S3, assistant S3 who also acts as an air observer, two operations NCO's, four Radio Telephone operators, one survey NCO with two EM, one commo NCO with one to three EM, and S4 representative, two medics, a fire direction officer, chief computer and five to seven fire direction personnel. The survey and commo NCO's double as assistant operations sergeants. Firing batteries on airmobile operations move with sixty to seventy personnel, and can function with forty-five. Essential personnel only are taken forward. Supply, maintenance, wire and administrative personnel are usually stationed with the forward support element."

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Reference.

Subparagraph 74c, FM 57-35, "Airmobile Operations."

10. Incident/Observation.

New Techniques. Airfield Defense - Armed aircraft are being employed more aggressively in airfield defense. Routine armed surveillance of airfields is conducted nightly on varying schedules. The armed fire teams are coordinated with fixed or rotary wing flare ships. Purpose of the flight is to provide protection to the airfield through surveillance, investigation of suspected activity, employment of firepower on hostile groups and an indication to the VC that defenses are alert. Aircraft fires are coordinated by radio with the command post.

Lesson Learned

The employment of armed helicopters for day and night defense of an airfield is feasible when properly coordinated with other defensive measures.

Reference.

Chapter 12, FM 1-100, "Army Aviation," as amended.

11. Incident/Observation.

"The major tng accomplishment was proficiency with which a unit developed its airmobile capability. Having no previous training this unit accomplished necessary tng and performed its first mission within three weeks of receipt of its equipment. Standard operations procedures were developed and unit accepts this as routine mode of transportation."

Lessons Learned

"a. A standard non-divisional towed 105mm Howitzer battalion in six weeks of operation was able to master the techniques and fundamentals of airmobile artillery as a part of air assault operations. While this is an accomplishment of which the unit can be proud, its

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significance is that the doctrine is now so firm and the techniques so clearly defined that they can be mastered by an artillery battery or battalion, which is otherwise well trained, with ease during a short period.

"b. The CH-47 helicopter has proven to be a practical and reliable prime mover for the 105 howitzer.

"c. Training required of standard 105 howitzer unit in order to make the transition to airmobility revolves around the following key points.

"(1) The preparation of internal and external loads and the loading of the CH-47 aircraft.

"(2) Control of aircraft in flight and while entering and leaving the landing zone, including the associated radio communications problem.

"(3) Restriction on reconnaissance as to time and size of party.

"(4) Planning for and control of resupply operations in the landing zone.

"(5) Increased requirements for security of the gun position.

"d. Any means to reduce the amount and weight of equipment is desirable. Shields have been removed from the howitzer, and only a minimum of section equipment is carried. Sections share equipment. Each person is limited to one waterproof bag, or one duffle bag per two personnel. Only radio vehicles and mules are airlifted into the landing zones. External land lines are used only in rare circumstances; radios are used almost exclusively. Due to the jungle canopy, antennas must be raised, and the older family of FM radios have shown that they do not possess the needed range. Tentage is limited to small, lightweight, general purpose tents, and canvas tarps for troop and equipment shelters. The basic concept is 'if you don't need it, don't take it.'"

## Reference.

Chapter 7, section XI, FM 6-20-2, "Field Artillery Techniques," as amended.

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12. Incident/Observation.

"New tactics due to the airmobile concept were necessary. Minimum reconnaissance parties are used to find and prepare landing zones, and once infantry is landed to screen and secure, the artillery flights follow rapidly. The first CH-47 carries the advance party, and five minutes later the remainder of the battery is brought in. The size of the landing zone determines the number of CH-47's that can come in at one time so that each air movement will vary. The Battery Commander and S3 usually compose the reconnaissance party for an air assault, and fly in with the initial infantry air lift. Not only must they pick the various locations, but they must verify the suitability of the ground to hold weapons and vehicles. In some instances neither aerial nor ground reconnaissance was possible, and we had to rely upon Special Forces and CIDG personnel to select and secure the area. The requirement that a US Officer confirm the adequacy of the landing zone for a position area and verify its security is maintained. During the air assault and extraction phase of our task force organizations in support of ARVN, a unit was able to maintain control of the timing of air-lifts, verify security and issue necessary commands from an airborne command post. This was also an effective means of providing necessary radio relay over long distance. Duties of advance party personnel are decentralized and all personnel are trained as ground guides for landing helicopters. Loads for CH-47's were prepositioned to facilitate the maximum number of aircraft for an extraction. Howitzers are internally loaded, but ammunition is externally loaded in most cases.

"Major problem has been coordination of aircraft and artillery. Best solution is for all units in the landing zone, and all aircraft entering or leaving the zone to operate on a common air-ground frequency, controlled by a pathfinder team. Mutual clearance of artillery fires and aircraft is obtained, and resupply aircraft is obtained, and resupply aircraft are directed to their proper holding area. Pilots gained confidence by being able to fly under and adjacent to the artillery trajectory. During one operation, C Battery fired continuously for almost three hours, and maintained continuous fire for one and one half hours. In addition, the other battery in the area fired during this period HU-1 and OH-13 helicopters were able to enter and leave the landing zone by careful air control procedures.

"Security was provided from external resources, usually infantry companies or battalions. Complete perimeter defense is necessary, and artillery does not have the personnel to accomplish this.



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Experience has taught us that the amount of security can be decreased but that aggressive patrolling, and very close in defensive fires from infantry mortars and mutually supporting artillery is necessary."

## Reference.

FM 57-35, "Airmobile Operations."

### 13. Incident/Observation.

"Seven power saws were lowered into the area and some trees 250 feet high and up to six feet in diameter were cut down. A funnel 250 deep and approximately 80 feet in diameter was cut into the jungle for casualty evacuation. A great feat of skill and courage was performed by our Army and Air Force helicopter pilots as they maneuvered their planes in such a restricted area. Each casualty and all equipment that was not needed for the remainder of the operation was evacuated through this "Helicopter Funnel."

## Lesson Learned

"Helicopter pilots must be proficient in the operation of aircraft in unusual and confined areas in order to support the battle area and assist in the accomplishment of the combat force mission."

## USCONARC Comment

Considerable emphasis is directed towards confined area operations with loads during unit transition and individual transition training at the training base.

## References.

TC 1-10, "Transition Training in the UH-1 Helicopter."  
Paragraph 151, FM 1-100, "Army Aviation," as amended.  
Subparagraph 134(a)(2), FM 31-30, "Jungle Operations and Training."

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14. Incident/Observation.

"In order to conserve flying hours and to achieve a higher daily helicopter availability continuous armed helicopter cover flights over military compounds, operational areas, and convoys have been sharply curtailed."

Lesson Learned

"The use of fixed wing aircraft, such as the O-1F, for area surveillance missions has resulted in substantial increases in daily helicopter availability. Armed helicopter crews are positioned on ground alert and are available, on call, to the fixed wing surveillance aircraft. No decrease in the effectiveness of perimeter security has resulted from this change."

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## Section IV

### Enemy Tactics

#### 15. Incident/Observation.

##### "The Peoples Army Vietnam (PAVN) Enemy:

"He appeared to be well-trained. He was aggressive. He was equipped with a preponderance of automatic weapons and plenty of ammunition. He carried 3-5 Chinese potato masher hand grenades. He carried a softball-sized wad of cooked rice. Most of them carried a bed roll consisting of a piece of waterproof plastic and a hammock. His weapons were well maintained.

"He was an expert at camouflage and used every bit of cover and concealment to perfection. With only small arms, mortars, and antitank weapons he obviously sought to close with us in strength quickly before we could discover him - possibly to render our fire support less effective and certainly to overwhelm us and force us to fight on his terms. Without much overhead fire support, he probably has to fall back on expert camouflage techniques, attacks in mass, infiltrators, and stay-behind killer parties.

"He was a deadly shot. In caring for my men who had been killed and wounded, I was struck by the great number who had been shot in the head and upper part of the body - particularly in the head. He definitely aimed for the leaders - the men who were shouting, pointing, talking on radios. He also aimed for the men carrying radios. He appeared to concentrate on men wearing insignia of rank - particularly non-commissioned officers with stripes on their arms. In this war, I question if it is necessary, possibly even foolish, or inviting fire, for non-commissioned officers to wear insignia of their grade or any enlisted man for that matter. Within the small units, all men know their leaders. In base camp the leaders wear their insignia. On operations against the enemy, they should wear clean-sleeve fatigues.

"When attacking, the PAVN units confronting us used mass assault tactics preceded in some cases by light mortar and antitank rocket fire. The latter I believe is often mistaken for mortar fire. He also used encircling maneuvers with 50 - 75 men groups. He employed his machine guns extremely well and thoroughly understood the value of grazing fire. At night, he infiltrated small numbers up to our positions.

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The enemy sat up on top of grassy anthills, in trees, and good close-in firing positions. He was expert at probing our defensive perimeter at night and went to great efforts to try to force our troops into firing."

### Lessons Learned

"We must make imaginative and constant use of our tremendous fire support advantage to kill the PAVN enemy before he gets so close that we must fight him on his terms. This includes heavy use of the M-79 and even hand grenades to hold him out so that artillery, TAC Air, and aerial rocket artillery can work on him.

"We must take time and every opportunity to train our men, and especially our replacements, to perfection in small-unit fire and movement and fire and maneuver. If we do not do this, men will be killed who would not otherwise be killed.

"The commander on the battle field must continually anticipate what the future may bring or could bring and take steps to influence the future before it comes about. This applies to the enemy, to fire support; supply of ammunition, water, and medical supplies before the requirement arises; to friendly reaction to possible enemy action; and to all other matters having a bearing on a particular situation. Also, periodically throughout a battle, the commander must mentally detach himself from the action and objectively think - what is not being done which should be done to influence the situation, and what is being done which should not be going on."

### Reference.

Paragraphs 16 and 18, section IV, CON Pam 350-30-2, 15 December 1965.

#### 16. Incident/Observation.

"During recent operations, PAVN troops frequently attempted to confuse US troops during battle at night by yelling 'Friendly Forces, Friendly Forces'. This sometimes caused momentary confusion among our troops and allowed the enemy to either fire or take evasive action."

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### USCONARC Comment

All soldiers need to know the location and name of flanking units, and be alert to the possibility of VC/PAVN attempts to infiltrate position by subterfuge.

#### 17. Incident/Observation.

##### VC Improvised Explosive - Mines and Booby Traps:

"a. During the French and Viet Minh conflict, the Viet Minh used improvised explosive mines and booby traps effectively to harass, slow down and demoralize the French forces. The Viet Cong have improved upon their predecessor's techniques and are using emplaced munitions as an effective weapon. It is evident that we must learn something of the munitions and their use by the VC.

"b. A booby trap consists of a firing device (fuzing system) and an explosive charge. The explosive charge may be any explosive: demolition charges, artillery and mortar projectiles, bombs, land mines or grenades. Therefore it is apparent that a land mine may also be a booby trap and that it is merely a means of employing an explosive charge.

"c. VC Fuzing Systems. All the standard initiating principles of fuzing used in US munitions can be expected to be used by the Viet Cong. These initiating actions include pressure, pressure release, pull friction, pull release, chemical delay, mechanical delay and controlled firing. The complexity of the fuzing systems, their ingredients as well as their purpose, is only limited by the ingenuity of the man who constructs them. Thus, as many of the VC fuzing systems are locally produced, it would be impossible to enumerate all of the variations of fuzing systems found. General and basic principle systems will be discussed. It must be remembered that one or more fuzing systems or principle of fuzing may be found on any given piece of ordnance. An explosive item that is primarily designed to be control fired may also have a pressure release firing device attached. Remember:  
CAUTION OR COFFIN!

"Pressure Type Fuzes. Pressure type fuzes are probably the simplest to produce locally. The basic components are a firing pin, primer and detonator. A pressure type fuze can be made from a nail, a rifle cartridge and a block of wood. It may also be more complex

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with a firing pin retained in a cocked position by a key slot which, when depressed, releases the firing pin (figure 1). The Viet Cong make extensive use of modified mortar and artillery fuzes as pressure firing devices.

"Pressure Release Type Fuzes. Pressure release type firing devices, normally called 'mouse traps,' can be easily made from commercial mouse traps. The principle behind this type is that the removal of the weight releases a compressed spring which forces the striker to fire the device. The most common pressure release type used by the Viet Cong is the grenade fuze (figure 2). The VC make extensive use of grenade fuzes for booby traps. Normally, the delay element is replaced with an explosive relay to obtain an instantaneous detonation.

"Pull Type Firing Device. The most common pull type firing device used by the Viet Cong is the pull friction fuze, similar to the ones found in VC and Chicom stick grenades (figure 3). When used as a mine or booby trap fuze, the delay element is usually removed and replaced with an explosive relay to obtain an instantaneous detonation after ignition. The pull type firing device is characterized by a slack trip wire. Although mechanical pull type fuzing devices have not been recovered recently, many were used against the French, and it is believed that mechanical firing devices are in the VC supply system. A Chicom or VC version of the Russian firing device is most likely to be used in Vietnam because these were widely used in Korea after Chicom intervention.

"Pull Release Type Firing Device. Pull types are designed for actuation by either an increase (pull) or decrease (release) of tension in a taut wire (figure 4). Pull release firing devices are also called tension release devices. Extreme caution must be observed when encountering a taut trip wire, as a cocked striker is always used in this type of fuze and any movement of the wire or ordnance may activate the striker. To render a pull release device safe, the striker must be blocked with a positive safety between the striker and the primer. Many straight pull devices can be used as a pull release firing device by attaching the trip wire to the striker. Pull type devices rigged for a pull release normally activate when the trip wire is broken.

"Control or Command Fired Fuzing Systems. All the firing devices mentioned previously can be command fired by a person lying in wait. The fuzing system is activated by an extension of the trip wire when a suitable target presents itself. The most common

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method of controlled firing by the Viet Cong is by electrical means. This is accomplished by inserting an electrical blasting cap into the ordnance, laying a firing cable to a concealed position and connecting an electrical source (battery or blasting machine) when the target comes within range. The Viet Cong use this method in all types of ordnance - including underwater mines (figure 5). The Viet Cong have also been known to use radio controlled triggering devices that are activated by signal transmissions on selected frequencies.

"Delay (time) Firing Devices. A clockwork delay type and a chemical delay type have been encountered in Vietnam. The clockwork delay is the most common. One type of VC clockwork delay firing device is made from commercial watches. Two contacts are added; one to the hands and the other to the face of the watch. When the set time runs out, the circuit is completed to an electric blasting cap. Small alarm clocks have also been used, utilizing the clock's alarm system to complete a circuit. Chemical delay devices were used by French forces in Vietnam and may still be encountered. These are similar to the US firing device, demolition, delay type, M-1."

"d. Grenades. Many small explosive items normally used as grenades and which give the appearance of grenades are used by the VC as antipersonnel (AP) mines. Both the striker release and the pull friction grenade fuzes with the delay element removed are used in these small items. Some examples of how these small items have been used are: (figure 6).

"As a booby trap: A grenade was placed under a rice bag in a VC safe haven. When friendly forces picked up the rice bag, the grenade exploded.

"As an AP mine: A small AP mine was attached to the side of a tree with a trip wire across the trail. The trip wire was a monofilament cord resembling fish line leader and difficult to see. Unfortunately, a friendly patrol didn't see the trip wire until it was too late.

"As an AP mine: A grenade with its pin removed was placed in a hollow length of bamboo. A trip wire was attached to the grenade. A pull on the trip wire would have pulled the grenade from the bamboo releasing the handle and allowing the striker to make its run. Fortunately, this device was discovered before it could do any damage.

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"As a booby trap: Grenades or small AP mines are attached by trip wires to such items as fence gates, doors, VC flags or flag poles or any other object that friendly forces may move or destroy.

"As a booby trap: Grenades were placed in the thatched roof of a house. The pins were pulled and the handles were tied down with string or rubber bands. When friendly forces burned the house, they were surprised by grenades exploding in the area. Nobody was injured."

"e. Artillery and Mortar Ammunition. All sizes of artillery and mortar ammunition are used by the VC as mines. They use the smaller projectiles for AP mines and the larger ones as antivehicular mines. Both types may be equipped with any of the firing devices previously mentioned. Electrically controlled firing is often used to detonate these types of main charges. A few methods of employment are listed below: (figure 7).

"A 155mm artillery projectile was buried in a dirt road and wired to be fired electrically. The charge was detonated under a US officer riding in a 1/4 ton vehicle. Many incidents are recorded of larger artillery shells having been planted in roads and control fired when a prime target presented itself.

"During a recent operation, a large number of mortar and artillery rounds (75-105mm) were suspended from trees and control detonated when US troops came within range.

"A 105mm round was found under the floor of a building in a VC area. It was prepared to be detonated by a pressure type fuze under a loose board.

"Any application used with the grenade type mines can be used with mortar and artillery ammunition. 60mm mortar rounds have been recovered with grenade fuzes attached and undoubtedly were intended for use as mines - the delay element had been removed from the fuze."

"f. Bombs. The VC consider the 20lb fragmentation bombs to be excellent antipersonnel mines. The larger bombs (from 100 to 1000 lbs) will stop and destroy any vehicle on the roads (figure 7). The VC are using more and more bombs as mines and are known to use excessive amounts of explosive to do a job. Bombs are usually used in

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VC safe havens, preplanted on likely avenues of approach, and are control fired when friendly forces advance.

"g. Locally Manufactured Mines.

"The most famous and fast becoming the most widely used VC locally produced mine is their directional mines (Claymore type). These items have been found in sizes ranging from approximately 8 inches in diameter to 12 inches in diameter. The principle behind these mines is that a large amount of fragments are propelled in a given direction by an explosive force. The effective range is approximately 200 meters with a dispersion area of 16-20 meters at this range. The VC directional mine has been used against troops, helicopters in landing areas, light vehicles, and as a terrorist weapon. This item is normally control fired but has been found fuzed with other firing devices to include delayed fuzing.

"Any type of container may be used as a mine. Two very simple and easily manufactured explosive items were discovered during a recent US operation. One item consisted of a bamboo tube filled with explosive and a standard VC pull friction grenade fuze altered for instantaneous detonation (figure 9). The other was explosive wrapped in black plastic with a cocked striker mechanical grenade fuze (figure 10).

"h. VC Terrorist Explosives.

"A footlocker addressed to a US officer was delivered to a BOQ. This footlocker contained over 100 pounds of explosive material with a clockwork activated fuze. Personnel working in the BOQ were about to deliver it to the room number indicated in the address, but became suspicious when they realized that the name in the address was not the same as that of the officer occupying the room. The footlocker was opened and the bomb was disarmed minutes before it was to detonate.

"A hand grenade was placed in the front suspension system of a jeep in such a way that any movement of the vehicle would dislodge it, thus releasing the handle and causing it to explode.

"A fountain pen was left on the floor of a vehicle to be picked up and examined by some unsuspecting person. When X-rayed it was found that the pen contained sufficient explosive to blow a man's hand off. It was rigged to explode when the cap was removed.

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"Cigarette lighters of the Zippo type have been delivered to US advisors and left where they would be easily found. These lighters are explosive booby traps that detonate when the unsuspecting person attempts to light it.

"Grenades have been camouflaged in bread, briefcases and baskets of fruit. On a recent occasion, a loaf of bread containing a grenade was thrown into the back of a US Navy truck. Personnel riding in the truck bed were able to throw it out before it exploded. Although two individuals received wounds, more serious injury and probable death were avoided.

"Directional mines (Claymore type) have been hidden in the saddlebags of bicycles and motor bikes. Automobiles have been made into large bombs by filling door panels, seats and trunks with explosives. These type bombs or mines need not be within close proximity of the target to cause death and destruction."

#### USCONARC Comment

"Knowledge of American Ordnance will assist in the recognition and categorization of enemy type mines and booby traps thereby enabling corrective action to be taken.

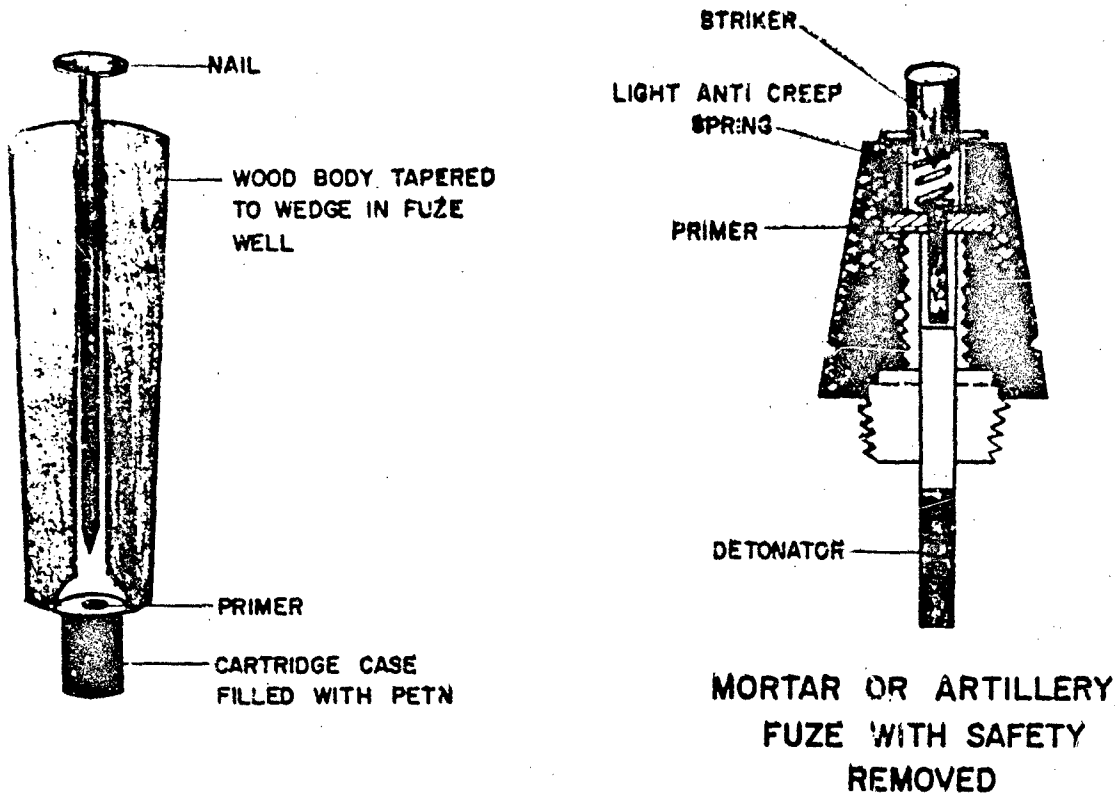
#### Reference.

Paragraphs 16 and 18, Section IV, CON Pam 350-30-2, 15 December 1965.

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### SIMPLE PRESSURE TYPE

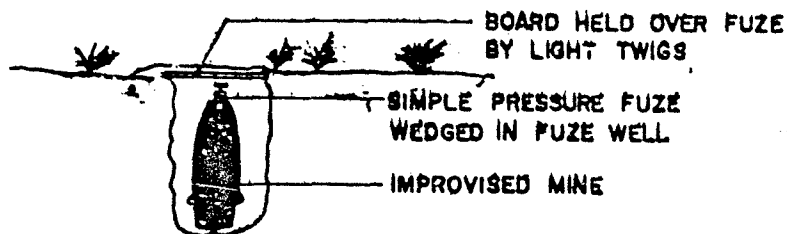


FIGURE 1. PRESSURE TYPE FUZES

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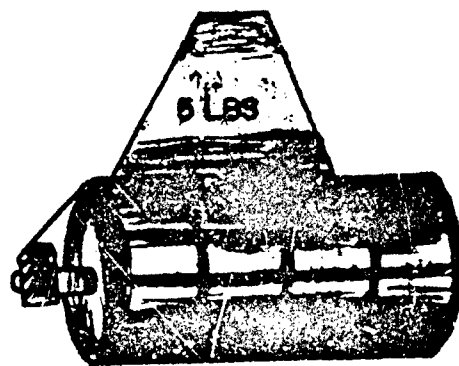
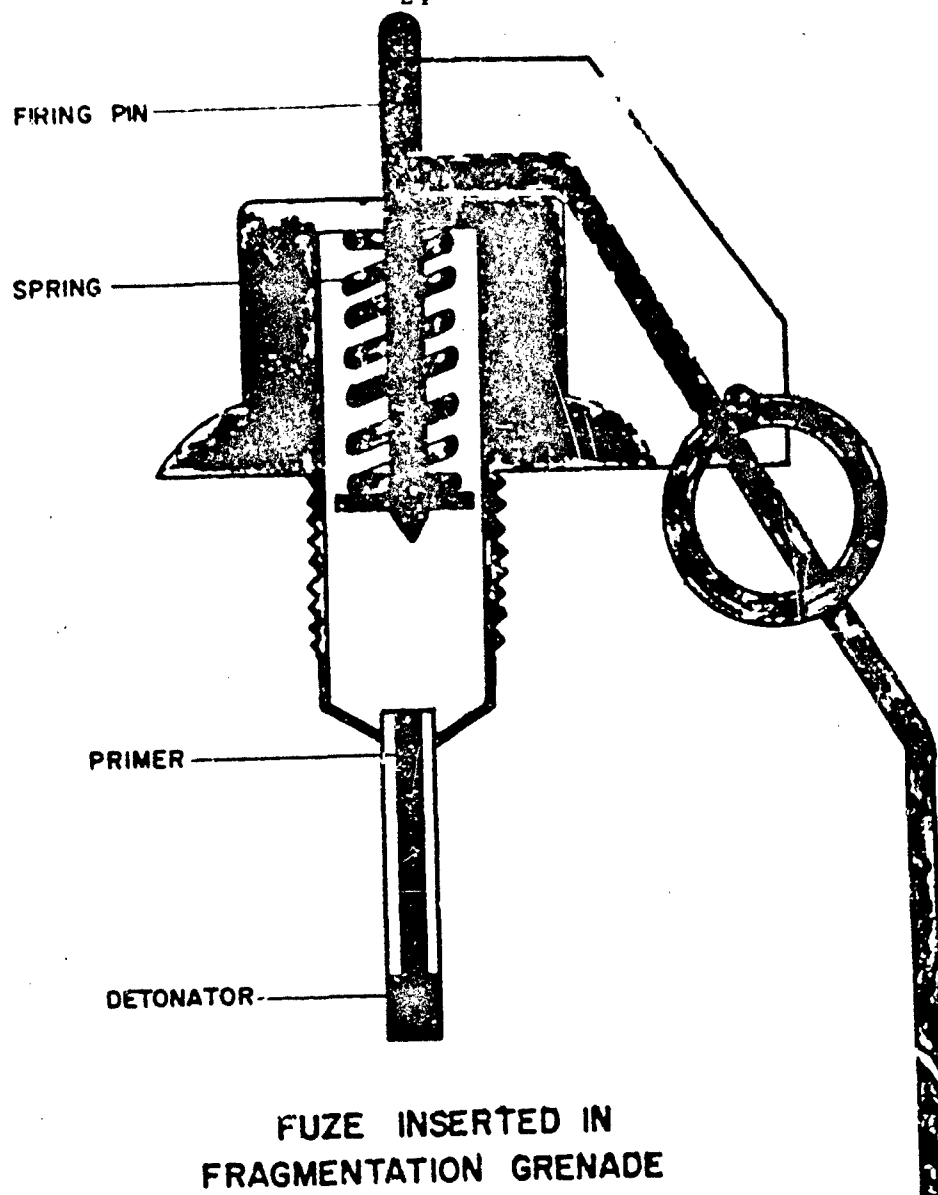


FIGURE 2. PRESSURE RELEASE TYPE FUZES.  
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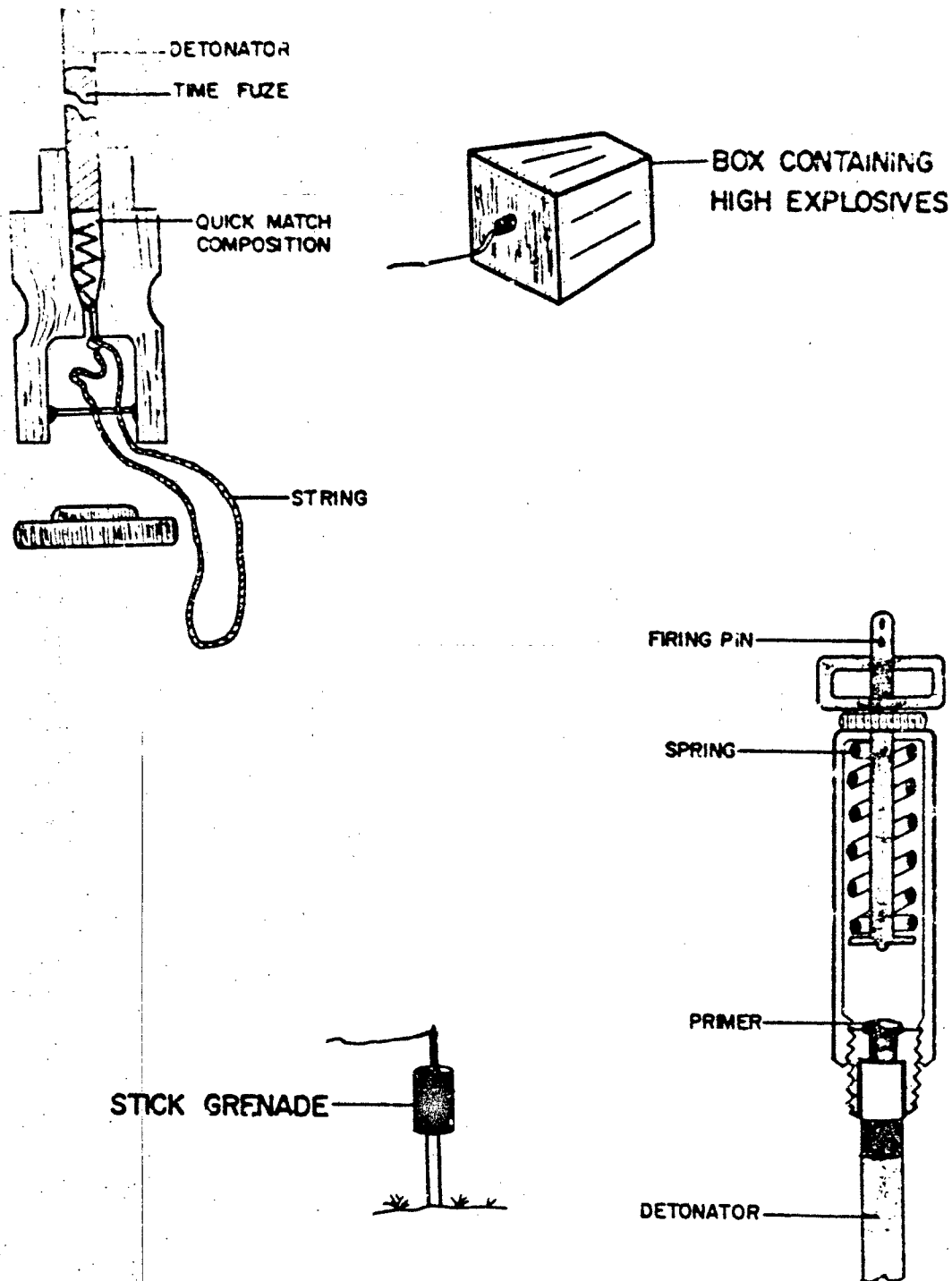


FIGURE 3. PULL TYPE FIRING DEVICE.  
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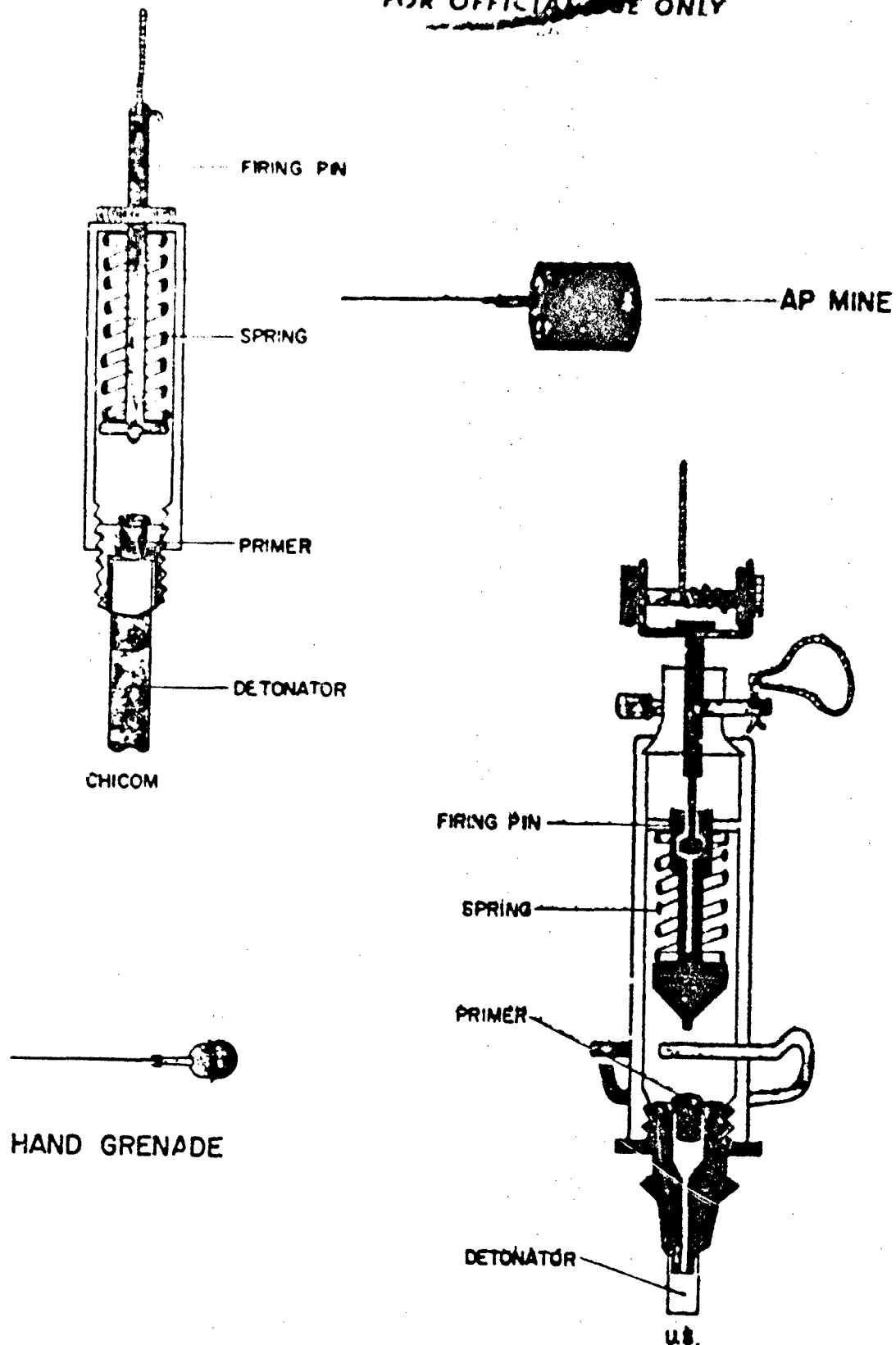
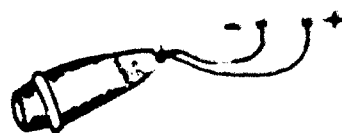
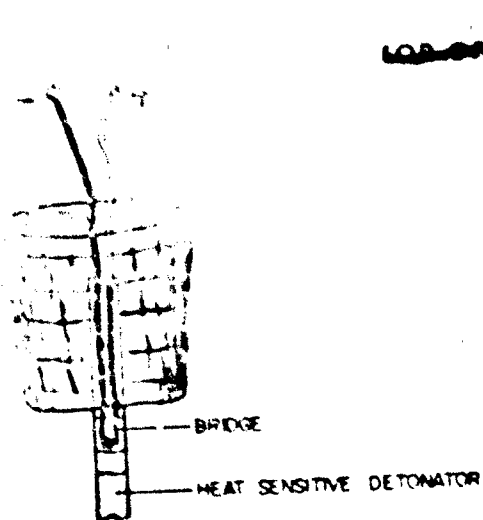
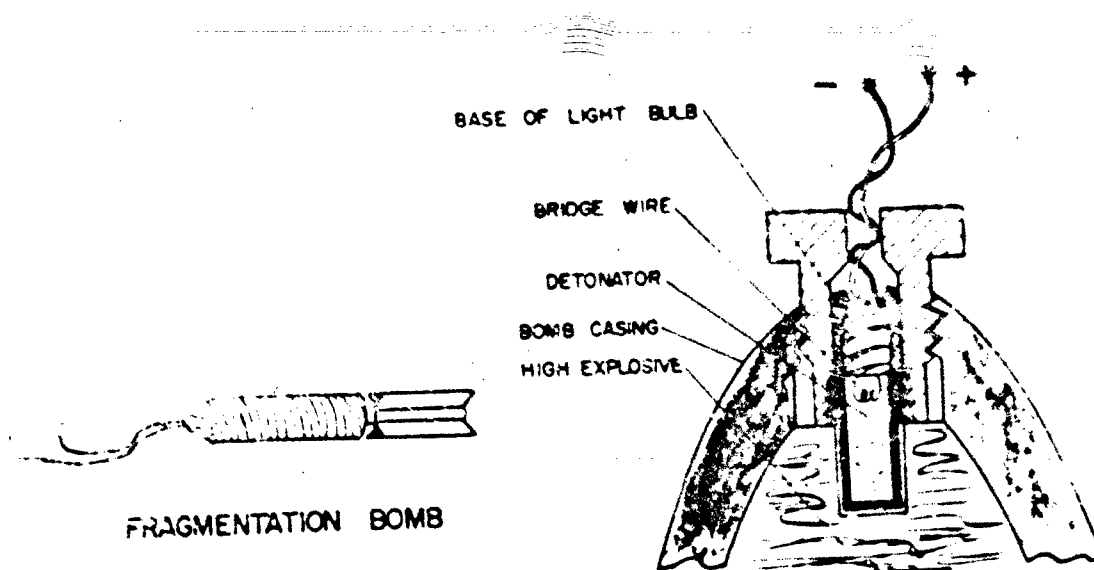


FIGURE 4. PULL RELEASE TYPE FIRING DEVICE.  
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ARTILLERY PROJECTILE



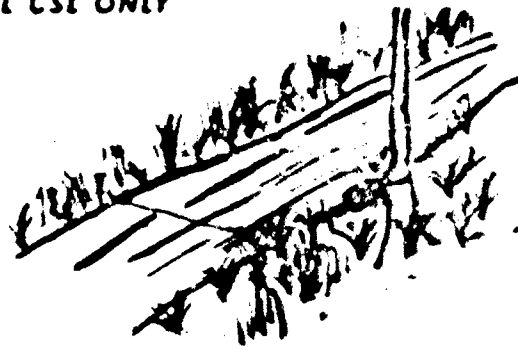
FRAGMENTATION BOMB

FIGURE 5. CONTROLLED FUZING SYSTEMS.  
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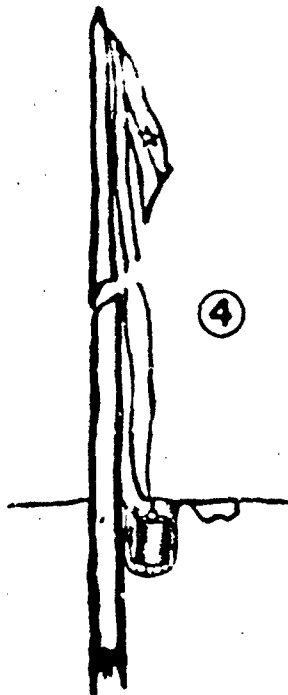
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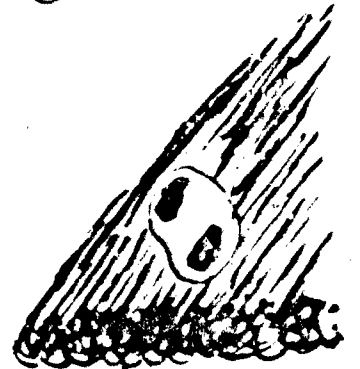
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FIGURE 6. SOME METHODS OF EMPLOYING SMALL EXPLOSIVE ITEMS  
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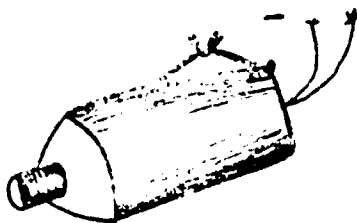
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FIGURE 7. SOME METHODS OF EMPLOYING IMPROVISED MINES.  
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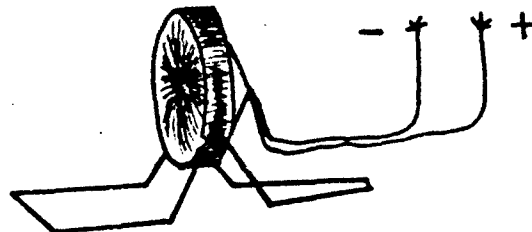
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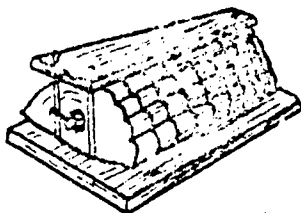
13 LB CEMENT



BASKET



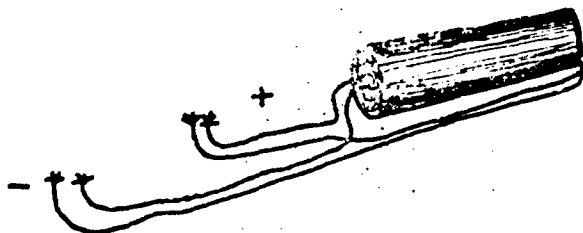
DIRECTIONAL  
(CLAYMORE TYPE)



CEMENT TURTLE



SHAPED CHARGE



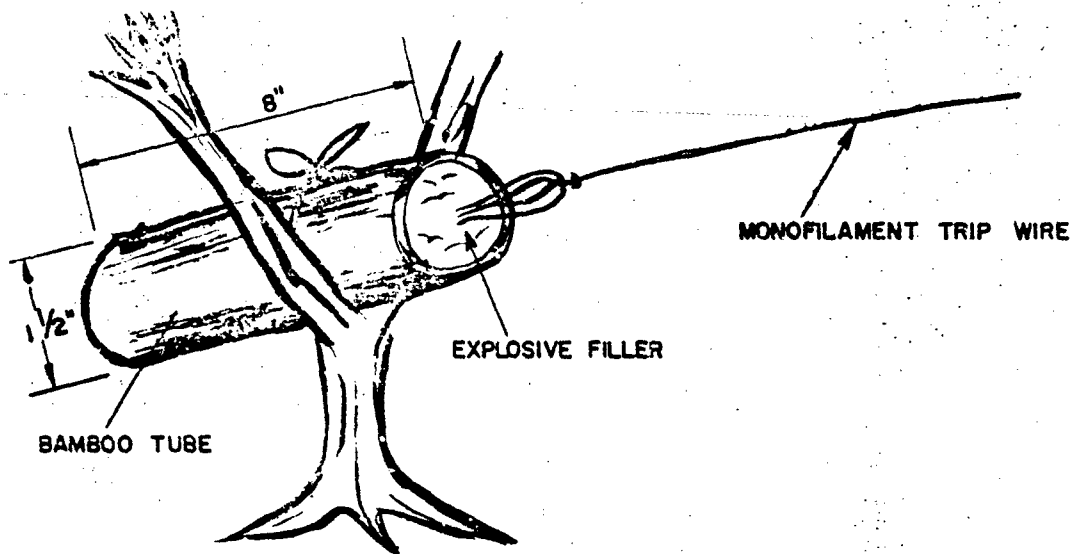
FIBER OR SHEET METAL

FIGURE 8. SOME VC LOCALLY MANUFACTURED MINES.

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MINE TIED IN CROTCH OF BUSH RIGHT OFF OF TRAIL AND MARKED WITH BROKEN SAPLING APPROXIMATELY 3 FEET IN FRONT OF MINE.

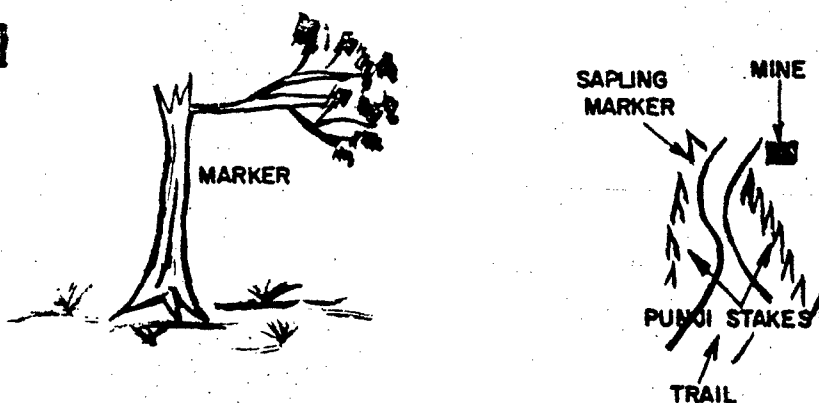


FIGURE 9. VC LOCALLY MANUFACTURED EXPLOSIVE ITEM.  
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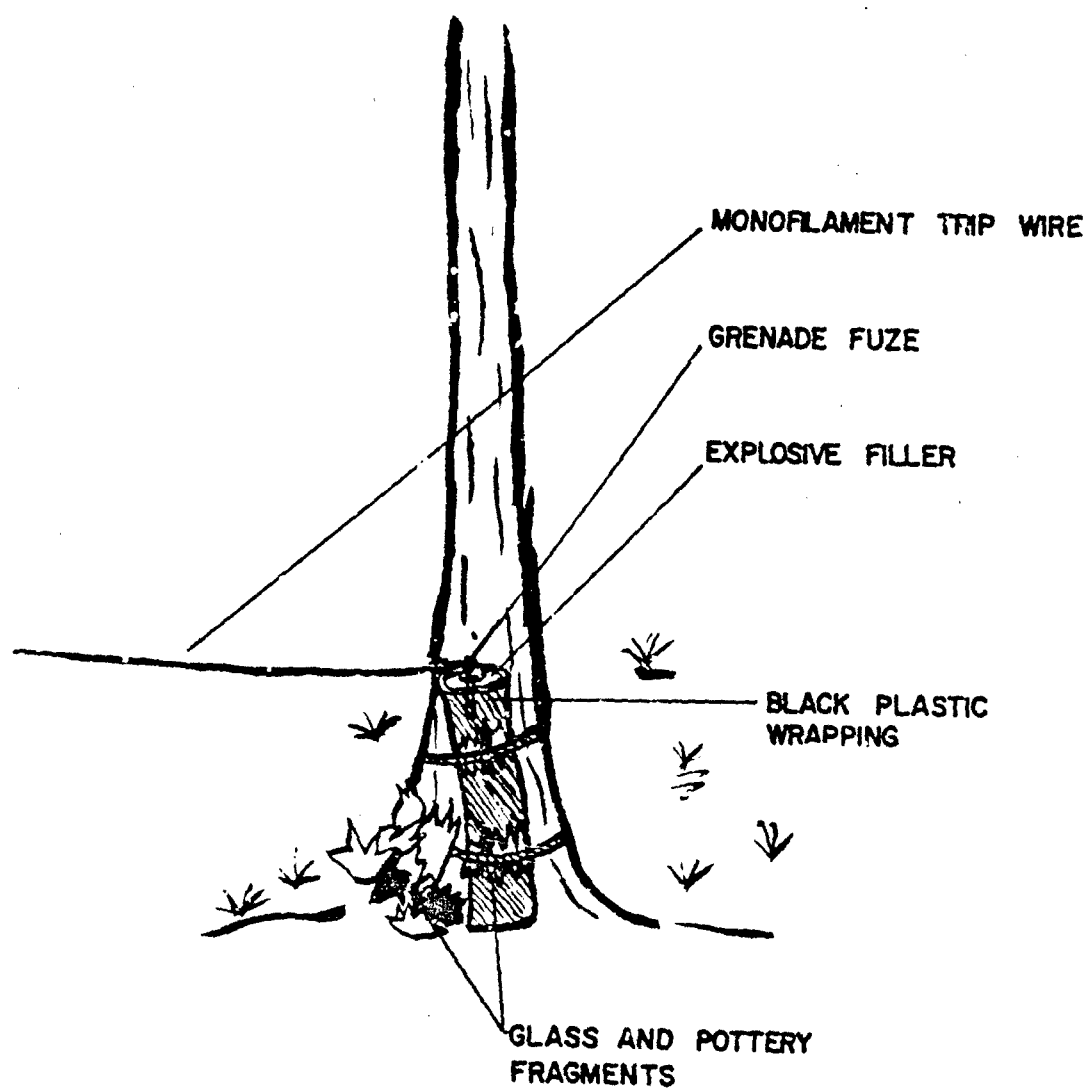


FIGURE 10. VC LOCALLY MANUFACTURED EXPLOSIVE ITEM.  
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## Section V

### Basic Tactics - Friendly Forces

#### 18. Incident/Observation.

##### "Patrols:

"a. The minimum size combat patrol that should be sent out on an operation is 15 personnel. The patrol must have the capability to sustain itself for at least 24 hours, and each member must possess the ability to request and adjust artillery fire and tactical air strikes.

"b. Two long range reconnaissance patrols of five men each were employed on an operation. These men sighted and reported several groups of VC and, when possible, directed air strikes against them. Both patrols were later extracted.

"c. A unit trained Long Range Reconnaissance Patrols (LRRP) patterned after teams employed by Special Forces in Vietnam. The LRRP platoon consists of a lieutenant, platoon leader, headquarters section, and four teams of 6 men each. These teams are introduced deep into enemy territory by helicopter where they remain for a long period reporting periodically by radio on enemy activities. Three such teams launched a highly successful operation which led to the capture of 25 VC suspects. They also were able to adjust artillery fires onto enemy movements and encampments, and to provide up to date intelligence."

#### Lessons Learned

"The presence of active ground patrol forces acts not only as a deterrent to enemy movements, but it provides the commander with up-to-the-minute accurate information of likely enemy intentions. Patrols of this type help to seize the initiative for our forces and to deny the enemy the security he seeks to plan and set up future operations."

#### Reference.

Paragraphs 114, 115, 116, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

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### 19. Incident/Observation.

"On several occasions when a US unit departed an area VC elements returned to reoccupy the area or search for discarded American equipment. During recent operations, well camouflaged US stay behind units have been successful in ambushing returning VC forces. When a stay behind force cannot be left, aerial surveillance, and harassing and interdiction fires have been effective in causing VC casualties when they re-enter the area."

#### References:

Paragraph 49 1, and subparagraph 50a(2)(c), FM 21-50, "Ranger Training and Ranger Operations."

Subparagraphs 93b, and d, and subparagraph 96b, FM 31-30, "Jungle Training and Operations."

### 20. Incident/Observation.

"The value of scout dogs on the operation was limited. They were used on several occasions to go through bunkers, however, no enemy was found in these bunkers. Another way the dogs were used was to help select the best route back to the base camp as the patrol was returning. It is advisable to use the same dogs and dog handlers with each unit. It was also believed that dogs working with ARVN forces on a continuous basis, as these did, and then brought into the operation to work with American Forces disrupts their sense of smell."

#### References:

Paragraph 26, Section V, CON Pam 350-30-2, "Operations - Lessons Learned."

Subparagraphs 200c and 202b, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

### 21. Incident/Observation.

"In rugged or heavily wooded terrain ground observers frequently encounter difficulty in locating and adjusting the initial rounds. The aerial observer cannot always see the target."

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### Lesson Learned

"If both observers are monitoring the same radio frequency, desired results are most efficiently obtained by combining the capabilities of both observers. The aerial observer "walks in" the initial fires until the ground observer can assume control for the close-in adjustment."

#### Reference:

Paragraph 96, FM 31-30, "Jungle Training and Operations."

#### 22. Incident/Observation.

"It is an advantage to be able to set up a battalion base and operate from that base rather than constantly move the battalion as a whole. This procedure expedites logistical support and command and control. Heavier weapons such as 4.2 mortars can also be delivered into the base if needed."

### Lesson Learned

"A unit reported the above procedure as the best way to search an area."

### USCONARC Comment

Portion of paragraph 82, FM 31-16, "Counter guerrilla Operations," is quoted:

"Owing to the difficulties of supporting forces operating in jungle and because of the limited time that units can operate independently in this terrain, it may be necessary to establish tactical bases to enable deep penetration of hostile territory."

#### References:

Paragraph 24, Section V, CON Pam 350-30-2, "Operations - Lessons Learned."

Paragraph 82, FM 31-30, "Jungle Training and Operations."

Paragraph 72, FM 31-16, "Counter guerrilla Operations."

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23. Incident/Observation.

A unit reported taking part in the examples of operations listed below during the last few months:

"a. Search and Clear - operations conducted with a permanent intention to remain in the area and pacify the area.

"b. Search and Destroy - operations to seek, find, and destroy enemy forces.

"c. Support of RVNA Forces - largely artillery support operations, although several operations were actually conducted in conjunction with RVNAF operations.

"d. Security Operations - operations whose primary purpose was to provide security for incoming units, or security of ground lines of communications such as Highway 19.

"e. Surveillance Operations - operations whose purpose was to provide information on trails, movements and build-up of enemy forces."

Lesson Learned

This item has been included as a guide to assist units in writing scenarios for Field Training Exercises.

24. Incident/Observation.

"One unit during the recent operation achieved considerable success in combating snipers in trees by systematically spraying all trees to their front with automatic fire, at first light, and on a given signal. The process must be deliberate in that a unit such as a squad or platoon should be given a sector to cover instead of firing at random. In addition to killing the enemy it will cause him to think twice before climbing a tree which affords him no cover but only concealment."

Reference:

Subparagraphs 37a(2)(3)(4), FM 31-30, "Jungle Training and Operations."

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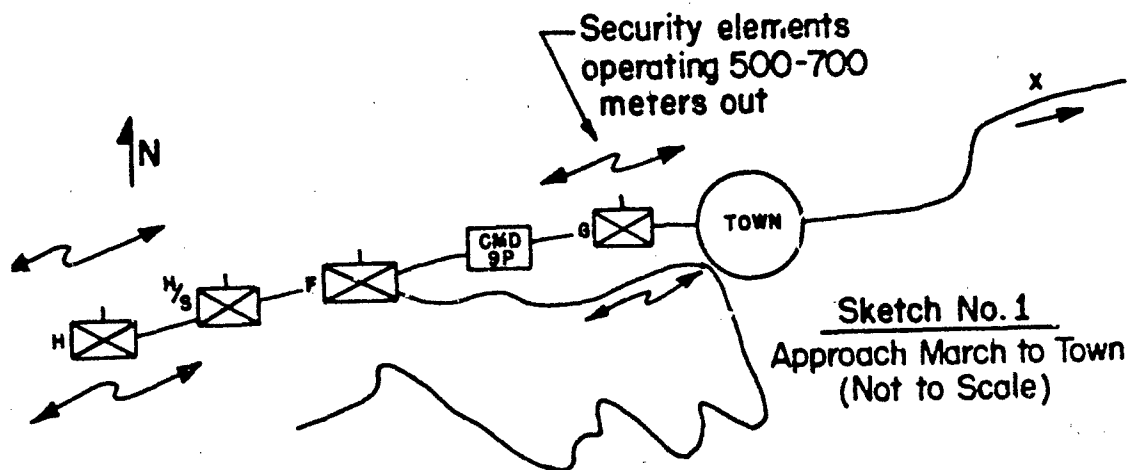
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25. Incident/Observation.

"a. Essentially, this action can be termed a movement to contact culminated by a VC ambush designed to destroy the entire march column.

"b. The battalion approached the town in tactical column with Co G as advance guard, a main body consisting of F and H/S Co and a rear guard consisting of Co H. Security elements were operating along the flanks of the advance guard (Co G) some 500-700 meters from the route of march, about 100-150 meters to the flanks of the main body, and some 200 meters to the flanks of the rear guard (Co H) (See Sketch No 1). The two available 81mm mortars were attached to the Co G (advance guard).



"c. Upon approaching the town Co G's flankers passed through abandoned VC entrenchments to the southwest of the town. With no contact as yet, the company moved through the town into the rice paddies beyond. At this point the action was initiated by the VC, engaging Co G with sniper fire followed by progressively increasing small arms, automatic weapons and mortar fire from the southeast (See sketch No 2). Co G began to develop and eliminate this attack by aggressive action to include use of its attached 81mm mortars in the direct lay role.

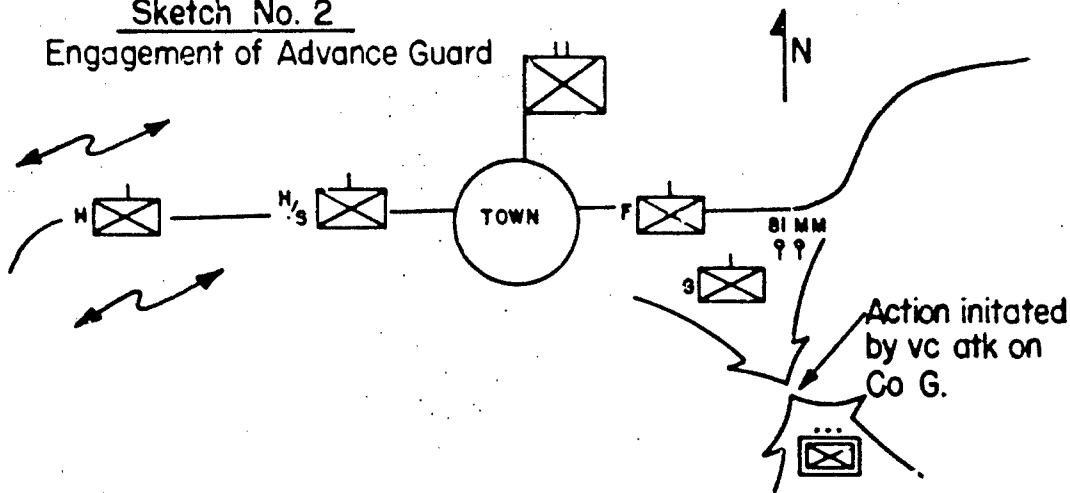
"d. The initial sniper contact of Co G was viewed as a harassing tactic by the battalion commander who ordered Co F to continue the march as the column advance guard, with Co G to eliminate the harassment and rejoin the column as the rear guard. Co F promptly moved forward, passing through the town and into the open area to the east.

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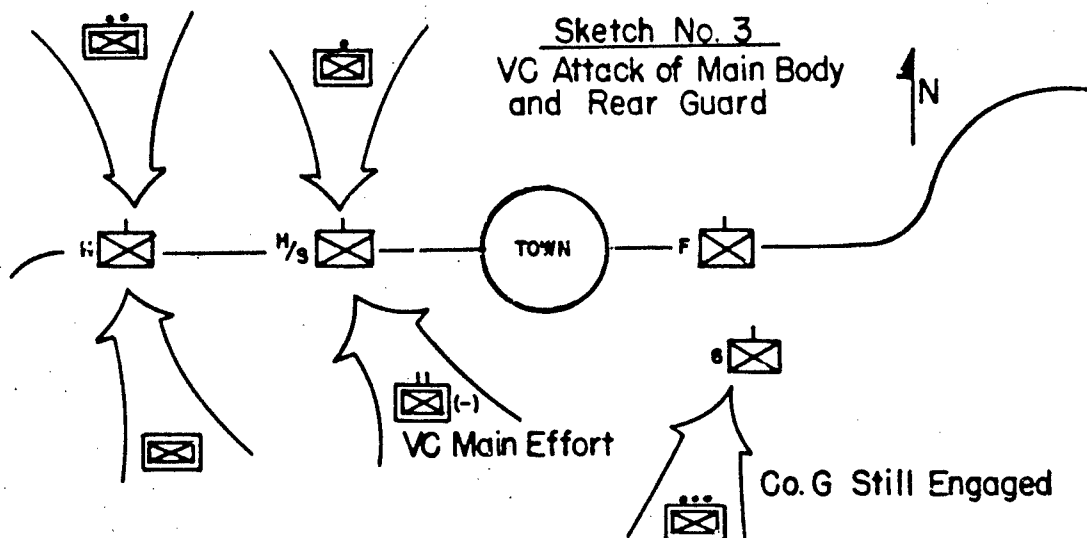
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Sketch No. 2  
Engagement of Advance Guard



At this time H/S Co was located in open ground just to the west of the town, with Co H some 500 meters to its rear, in the vicinity of the entrenchments previously cleared by Co G. As Co F passed through the eastern edge of the town a heavy concentration of fire was received by elements west of the town and a major effort was made by the VC, from both north and south of the road, to encircle H/S Co and to destroy the rear guard (See sketch No 3).

Sketch No. 3  
VC Attack of Main Body and Rear Guard



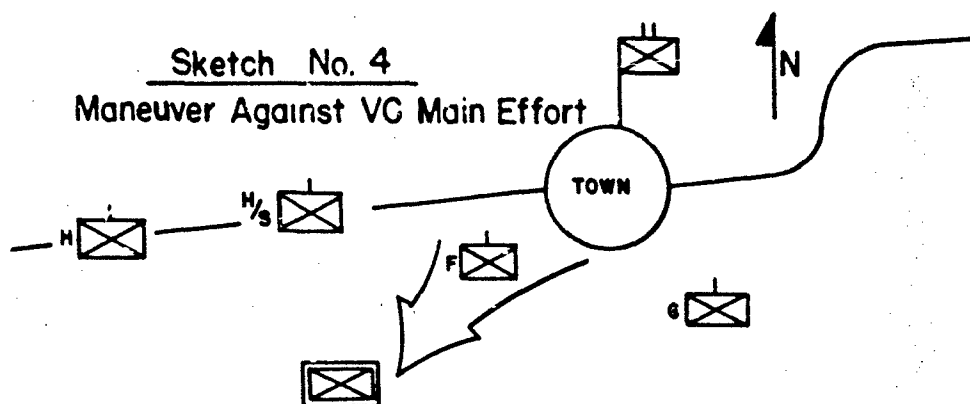
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This effort was initiated from areas previously traversed by the adverse guard flankers by forces which moved into ambush positions after the flankers had passed. These forces were reinforced as the action progressed.

"e. Reacting quickly, Co F was turned around by order of the battalion commander, and brought back through the town. With the assistance of H/S company and support from 155mm artillery located some 14km to the northwest, it succeeded in eliminating the serious threat to the center of the column (see sketch No 4). In Co H's area, the company commander was killed and command was immediately assumed by the artillery forward observer who, with the assistance of three armed helicopters, successfully repulsed the enemy's attack and evacuated his wounded by helicopter.



"f. During this action three separate engagements can be noted. The initial attack on the advance guard; the attempt to encircle and destroy H/S Co; and the attack on the rear guard. All these attacks were effectively foiled by aggressive leadership, rapid and effective response to orders, fire power, and use of supporting arms, resulting in severe losses being inflicted on the attacking VC forces.

"g. Results of this operation were: 105 VC dead (body count), 2 VC wounded and captured, 8 crew served and 29 miscellaneous weapons and 2 radios captured."

### Lessons Learned

"a. This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained

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in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied.

"(1) Rapid and aggressive attainment of fire superiority by maneuver, coupled with employment of all organic and all available supporting arms (e.g. armed helicopters and 155mm artillery), will provide the margin of victory.

"(2) Where effective centralized control of supporting weapons cannot be realized, supporting weapons (e.g. 81mm mortars attached to the advanced guard) should be attached to the unit most likely to experience contact.

"(3) Radio discipline is essential. In this action, due to personnel casualties and destruction of radio equipment by initial enemy fire, only the battalion tactical command net was operating effectively. Outstanding net discipline was maintained, however, allowing effective control of the battalion by its commander, adjustment of artillery fire, and control of armed and MEDEVAC helicopters.

"(4) Aggressive leadership was exhibited by all commanders, to include the immediate assumption of command of H Co by the artillery forward observer when the company commander was killed.

"b. Of particular note as a result of this action are two techniques employed by the VC to increase the effectiveness of their ambush.

"(1) VC units attacked the center of the column from positions previously traversed by the flank security elements of the advance guard, moving into these positions during the time and space interval between the flankers of the advance and rear guards (estimated as 30-45 minutes). Flank security for main body elements was limited to areas in close proximity to the route of march.

"(2) Initial enemy fire was directed against commanders and radio operators, resulting in the loss of one company commander and nine radio operators (three killed and six wounded), and destruction of three radios."

#### USCONARC Comment

Subparagraphs 5-34d(1) and (2), FM 61-100, "The Division" is quoted:

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"(1) Flank and rear security forces protect the main body from ground observation and surprise attack. These forces must be strong enough to defeat minor enemy forces or to delay strong enemy attack until the main body can deploy.

"(2) The flank guard travels on routes parallel to that of the main body or moves by bounds to occupy key positions. The rear guard follows the main body."

References:

Subparagraph 35h, and paragraph 66, FM 31-16, "Counter guerrilla Operations."

Chapter 5, Section IV, paragraphs 5-31 through 5-40, FM 61-100, "The Division," as amended.

26. Incident/Observation.

Examples of Chemical Operations in Vietnam.

"a. Riot Control Agents:

"Tunnels have been cleared with CS grenades used alone. The preferred method is to use the portable "Mity Mite" air compressor with smoke first to locate alternate exits and vents. CS is then blown in by the compressor to flush and deny. CS can also be used alone to flush, deny and locate exits and vents and at the same time achieve surprise effect. When HC Smoke was introduced into the tunnels, it remained hazardous in lower levels, even after continuous pumping of air with the Mity Mite. In at least one of the instances, persons were overcome by oxygen deficiency several days after the HC had been put into the tunnel.

"For area coverage, a field fabricated helicopter grenade launcher has been used which covers 300 square meters with each grenade. One helicopter can drop as many as 400 grenades at a time. Duration of coverage varies from one to 15 minutes, depending on wind.

"Plans are being formulated to use riot control agents in base defense and anti-ambush operations.

"b. Flame:

"Psychological aspect of flame is being exploited by using fabricated 6 gallon and 110 gallon (two steel drums welded together)

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fougasse along the perimeter, interspersed with bush flares and claymore mines.

"The M132A1 mechanized flame throwers (basic M113 APC) are being used for convoy escort and tunnel flushing operations. A very successful technique of tunnel flushings has been to squirt liquid mix followed by ignition. Flame has been observed exploding from several exits.

### "c. Defoliation.

"Power driven decontamination apparatus are being successfully used in Vietnam for local defoliant operations.

"Field expedient defoliant spray systems have been developed for the UH-1 aircraft. These are used on defoliant missions on the perimeter, along access trails, and isolated communication sites."

### USCONARC Comment

The examples listed above depict various uses of chemical munitions to assist operations and save lives of friendly forces. Self contained oxygen masks are required for personnel to explore tunnels in oxygen deficient atmosphere. Limit use of HC smoke in the tunnels which are to be searched by personnel unless they are equipped with oxygen masks. Personnel searching the tunnels should work in teams of 2 or more men. Photograph of chemical munitions and equipment now available for use in Vietnam is attached.

### References:

See paragraph 31, Section VI, CON Pam 350-30-2, "Operations - Lessons Learned."

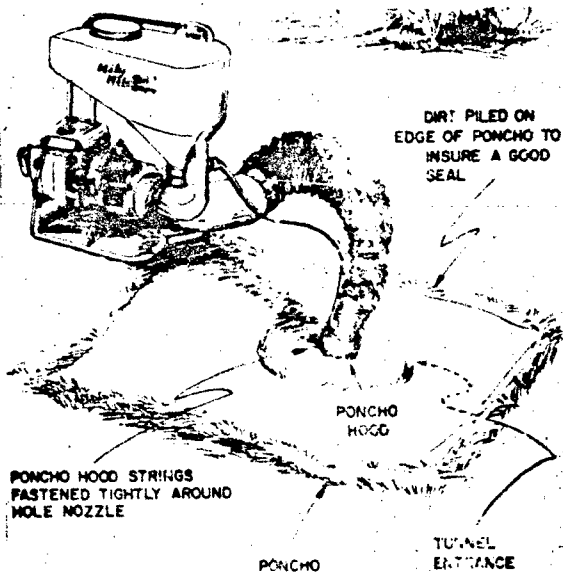
Chapters 4 and 5, FM 20-33, "Combat Flame Operations."

Chapters 2 and 3, TM 3-366, "Flame Fuels."

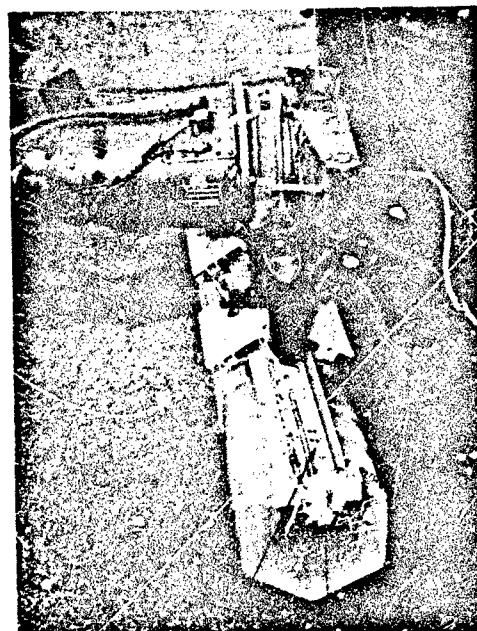
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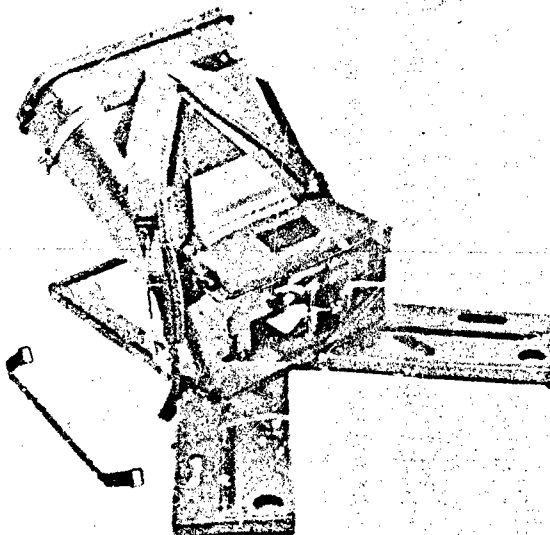


MITY MITE BLOWER



1. E159 Cluster
2. Parachute Bay

E159 cluster mounted on UH-1B helicopter.



EMPLACED

LAUNCHER, 35 mm CARTRIDGE, 16-TUBE, E8

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## Section VI

### Knowledge of Current Use of Weapons and Equipment

#### 27. Incident/Observation.

"Although the SS-11 missile was designed as an antitank weapon, it has been found to be a particularly effective weapon against a number of hard targets. In one recent operation the VC took shelter in a masonry building. Attacks initially with 2.75 in rockets produced little results. A single SS-11 missile delivered from a helicopter was used several times to blow barricades around a village where pinpoint accuracy was needed to avoid destruction of neighboring houses. The SS-11 has demonstrated its capabilities for destroying fortifications that can be observed from the air."

#### Lesson Learned

"This missile system is limited only by the ingenuity of the employer, based on mission to be accomplished."

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## Section VII

### Inquisitiveness and Alertness

#### 28. Incident/Observation.

"Concurrent with a construction project, a headquarters of an Ordnance unit prepared and implemented a security plan for the area, constructed concertina wire barriers, bunkers, guard towers, individual prone fortifications, protective shelters against mortar and other indirect fire weapons, and other field fortifications to provide security for personnel, equipment, and materiel against sabotage, espionage, infiltration by covert and/or overt means by known insurgent groups active in and adjacent to the area. In addition, a security plan was published and implemented to cope with large scale VC attack against area facilities or damages resulting from natural causes. The plan outlined the physical security requirements for the area and includes instructions for the construction of barriers, field fortifications, communications, and instructions for members of the guard forces and unit commanders."

#### JSCONARC Comment

Such a plan should be included in SOP of all units prior to deployment, to be revised in theater immediately after arrival to fit local conditions.

#### Reference:

Paragraphs 62 and 63, FM 31-16, "Counter guerrilla Operations."

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## Section VIII

### Logistics and Combat Service Support

#### 29. Incident/Observation.

"A major unit with a large inventory of aerial delivery equipment recently deployed to USARV. The requirements for storage and maintenance of this equipment were not made known to USARV in sufficient time to permit direct shipment to the designated storage area."

#### Lesson Learned

"Commanders of units deploying to USARV that require storage and maintenance for aerial delivery equipment should make these requirements known as soon as possible. Early notification will enable the overseas commander to designate an adequate area and permit such equipment to be loaded for direct shipment to the designated storage area."

#### USCONARC Comment

Department of the Army movement directives normally authorize direct communication between interested commanders. This authority should be utilized in cases similar to the above.

#### 30. Incident/Observation.

"USARV recently encountered difficulties when a major unit deployed to Vietnam. Some of the difficulties encountered are listed below:

"(1) Ships carrying equipment for combat service support units arrived at the overseas port during the same period as the arrival of ships with the major unit's equipment. This concurrent arrival of ships would have resulted in a build-up of ships in a relatively unprotected harbor had USARV not diverted some ships into other ports. The diverted ships were then scheduled into the original port at a rate commensurate with the terminal and lighterage capabilities for off-loading equipment."

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"(2) Field kitchens of several units were not off-loaded for several days. Equipment for some units was stowed on as many as four different ships.

"(3) Advance copies of vessel manifests for cargo ships were not available in all instances.

"(4) Plans had been made to use the unit's organic helicopters for movement of personnel from the oversea port to the base area. The aircraft carrier, on which the helicopters were loaded, was scheduled to arrive prior to the troop ships. The helicopters were loaded in such a manner that prevented their being flown off the ship until six fixed-wing aircraft were off-loaded. USARV was initially given information which indicated that these aircraft were to be off-loaded at a port short of final destination. Subsequent information revealed that the ship's itinerary did not include off-loading enroute. Consequently, USARV requested the expedited arrival of the ship at another port in country so as to permit off-loading of these fixed-wing aircraft. The aircraft carrier then continued to its final destination in sufficient time to permit utilization of the helicopters in airlifting personnel to the base camp."

### Lesson Learned

"The difficulties encountered by this unit serve as a means of emphasizing the requirement for detailed planning in the unit and at all staff levels and close coordination and timely communications between all activities associated with the deployment of units to oversea destinations."

### References:

Chapter 8, Part III, c18 and c20, AR 55-10, "Military Standard Transportation and Movement Procedures."

Subparagraphs 3ac(1) and 21e, AP 220-10, "Field Organizations - Preparation for Oversea Movement of Units (POM)," as amended.

### 31. Incident/Observation.

"A high deadline rate has been reported on the Pneumatic Tool and Compressor Outfit 210 CFM Trailer Mounted. This high deadline was caused by operators not following starting and stopping procedures outlined in the TM."

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### Lesson Learned

"Only operators who have received appropriate training should operate this compressor. Operators should refer to the appropriate TM to insure proper starting and stopping procedures are followed."

#### Reference:

Subparagraph 9k, "Training in Maintenance and Supply Economy," CON Reg 350-1, USCONARC Training Directive.

#### 32. Incident/Observation.

"Reports indicate that 2-1/2 ton trucks with standard transmission have been experiencing pressure plate failure. A contributing factor causing pressure plate failure was attributed to operators riding the clutch."

### Lesson Learned

"Operators of 2-1/2 ton trucks must rectify any tendency to ride the clutch as this will damage pressure plates."

#### References:

Subparagraph 9k, "Training in Maintenance and Supply Economy," CON Reg 350-1, USCONARC Training Directive.

Paragraph 4-1, Chapter 4, TM 21-305, "Manual for the Wheeled Vehicle Driver."

#### 33. Incident/Observation.

"Conditions of climate and terrain in Vietnam may dictate that equipment maintenance operations be performed more frequently than required by maintenance publications. One unit has found it necessary to perform semiannual maintenance services every two months in order to keep equipment serviceable."

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### Lesson Learned

"Maintenance intervals and procedures contained in equipment manuals may require local adaptation to meet environmental conditions in Vietnam. Increased frequency of maintenance services and unremitting attention to operator maintenance are among the local measures that may be necessary to cope with equipment deterioration and avoid premature failures."

#### Reference:

Subparagraph 9k, "Training in Maintenance and Supply Economy," CON Reg 350-1, USCONARC Training Directive.

#### 34. Incident/Observation.

"Some units have deployed without their authorized TOE maintenance tents. Upon arrival, these units faced an immediate problem of acquiring or constructing suitable maintenance shelters."

### Lesson Learned

"Maintenance shelters are authorized in TOE to protect personnel and equipment from the elements and are essential to maintenance operations in unimproved areas. All concerned should emphasize the importance of equipping deploying units with authorized maintenance shelters before departure."

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## Appendix II

### Joint Exercises

#### 35. Incident/Observation.

"While CONARC (ARSTRIKE) forces continue to demonstrate a high degree of professionalism in the overall conduct of joint exercises some operational areas, especially those involving air movement out-loading operations (Marshalling) continue to require additional emphasis. Observers and evaluators of recent joint exercise outloading operations have reported incidents of excessive troop waiting created by early reporting to aircraft onload areas."

#### Lesson Learned

"In the planning and conduct of airborne assault operations as well as administrative air movements, every effort must be made to insure a smooth and rapid flow of personnel and equipment during out-loading (Marshalling) operations. Movement of personnel to onload sites and loading of aircraft should be conducted with minimum expenditures of time."

#### References:

Subparagraph 33a(3)(b), USCONARC TT 110-101-1, "Joint Airborne Operations."

Paragraph 84, FM 57-10, "Army Forces in Joint Airborne Operations."

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## Appendix III

### Combat Tips - Old and New

#### "STANDING ORDERS, ROGERS RANGERS

1. Don't forget nothing.
2. Have your musket clean as a whistle, hatchet scoured, sixty rounds powder and ball, and be ready to march at a minute's warning.
3. When you'r on the march, act the way you would if you was sneaking up on a deer. See the enemy first.
4. Tell the truth about what you see and what you do. There is an army depending on us for correct information. You can lie all you please when you tell other folks about the Rangers, but don't never lie to a Ranger or officer.
5. Don't never take a chance you don't have to.
6. When we're on the march we march single file, far enough apart so one shot can't go through two men.
7. If we strike swamps, or soft ground, we spread out abreast, so it's hard to track us.
8. When we march, we keep moving till dark, so as to give the enemy the least possible chance at us.
9. When we camp, half the part stays awake while the other half sleeps.
10. If we take prisoners, we keep 'em separate till we have had time to examine them, so they can't cook up a story between 'em.
11. Don't ever march home the same way. Take a different route so you won't be ambushed.
12. No matter whether we travel in big parties or little ones, each party has to keep a scout 20 yards ahead, twenty yards on each flank and twenty yards in the rear, so the main body can't be surprised and wiped out.
13. Every night you'll be told where to meet if surrounded by a superior force.
14. Don't sit down to eat without posting sentries.
15. Don't sleep beyond dawn. Dawn's when the French and Indians attack.
16. Don't cross a river by a regular ford.
17. If somebody's trailing you, make a circle, come back onto your own tracks, and ambush the folks that aim to ambush you.
18. Don't stand up when the enemy's coming against you. Kneel down, lie down, hide behind a tree.
19. Let the enemy come till he's almost close enough to touch. Then let him have it and jump out and finish him up with your hatchet."

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USCONARC Comment

These orders were written in 1756 by Major Robert Rogers.  
Basic fundamentals remain much the same, only technical advances in  
equipment necessitate adaptations.

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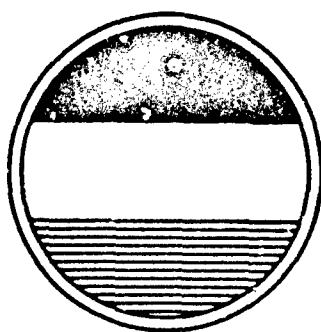
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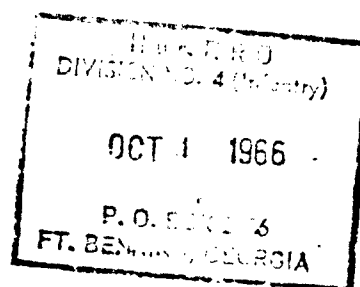
NO 350-30-4

# EDUCATION AND TRAINING

## OPERATIONS - LESSONS LEARNED



JULY 1966



HEADQUARTERS  
UNITED STATES CONTINENTAL ARMY COMMAND  
FORT MONROE, VIRGINIA

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UNITED STATES CONTINENTAL ARMY COMMAND  
Fort Monroe, Virginia

Pamphlet

15 July 1966

No 350-30-4

EDUCATION AND TRAINING

Operations - Lessons Learned

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references to current training publications.

2. General. Many lessons learned are being derived from operations in Vietnam, the Dominican Republic, major field exercises,

and other pertinent sources. These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most of our doctrine is sound and is being correctly applied. This also indicates that in training certain principles must be continually emphasized and presented in such a manner as to insure full understanding and effective execution by units when the need arises.

3. Objectives. The objectives are to--

- a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.
- b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.
- c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.
- d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.
- e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Orientation. The country of Vietnam varies considerably, ranging from open flatlands interspersed by rivers and canals to dense jungles and mountainous terrain. Headquarters, US Forces Vietnam, have stressed the point that "tactics and techniques which prove successful in a given area may not render the same results in all sections of the country." This factor should be borne in mind when reading "Lessons Learned." It accounts for variances in comments from commanders in the field. It points up the continued requirement for flexibility and a readiness to adapt to the type of terrain so as to use it to the best advantage.

5. Application. Sufficient copies are furnished commanding generals, 21 armies and USAJFKCENSPWAR (Abn) to permit further

distribution. In unit training programs, emphasis will be given to the close correlation of the contents of this pamphlet with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3 above.

6. Frequency of publication and numbering system. This is the fourth issue of a quarterly series, and should be read in conjunction with previous issues. Each subsequent publication will bear the same basic number, however, consecutive subnumbers will be assigned to each new issue.

(ATUTR-TNG)

FOR THE COMMANDER:

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Battelle Memorial Institute

## Appendix

## Lessons Learned, Combat Command Reports

## Section I

## Suggested Areas for Additional Training Emphasis

1. Incident/Observation.

"Vietnamese military drivers have a tendency to drive more to the center of the road than to the right-hand side. They also have a bad habit of tailgating."

## Lesson Learned

"It is advisable for American drivers to slow down and pull over to the right as much as possible when passing Vietnamese vehicles driving in the opposite direction. When a Vietnamese driver tailgates, it is safer to pull over to the right and to allow the Vietnamese vehicle to pass rather than to speed up in an effort to get away."

Reference.

Chapter 8 - Chapter 9, TM 21-305, "Manual for the Wheeled Vehicle Driver," as amended.

## Section II

## Joint Operations and Procedures for Airmobile Operations

2. Incident/Observation.

"The air cavalry squadron was frequently tasked to provide initial LZ security. Experience has indicated that the time from arrival of the air cavalry elements to the initial troop lift must be reduced to the absolute minimum (generally to less than 20 minutes) to take advantage of a secure area before the enemy has a chance to reinforce and build up defenses in that area. In several situations where this close coordination was not accomplished the enemy closed in on the LZ and attacked the second or third lifts."

### Lesson Learned

"The time between the arrival of the air cavalry security elements and the initial elements of the troop lift should be held to an absolute minimum by careful planning. Pathfinder teams should be planned for the initial lift to assure early, sufficient, orderly control of the LZ and to direct aircraft in between enemy and friendly fires."

#### Reference.

Paragraphs 47, 57, 77, FM 57-35, "Airmobile Operations."

#### 3. Incident/Observation.

"Command and Control at Company level. The company commander of an airmobile company in the assault is faced with dual functions that are at times in conflict. It is generally accepted that his place is in the lead troop carrier. Here he exercises his true leadership role. At the same time he must command and control his company. It is doubtful that the lead troop carrier is the position from which this best can be done. He cannot visually monitor the actions of his flight, effect coordination of artillery and USAF prestrike of the LZ, or observe hostile fire or mechanical trouble in the flight behind him. He is in a poor position to make an estimate of the situation and must depend primarily on radio reports. His maneuverability is limited since he is tied to that formation. To fill the 'Leadership' role he has sacrificed flexibility and with it some degree of control. So it would seem that at times it may be desirable to divorce the C. O. and the formation; to permit him to break away from the flight at any time without disrupting the formation.

"This demands a formation that will promote platoon integrity, facilitate the assumption of overall control at any time by either platoon commander and permit the splitting of the company by platoons on order. The formation should be adaptable to the size and shape of any LZ and of minimum time length to decrease exposure time in the LZ and permit better suppressive fire cover. Discussion brought forth the following concepts and ideas:

"One answer to these considerations after experimenting with several formations, was to place platoons abreast in staggered trail, Company V in trail, heavy left/right. In effect this reduces the time length, and LZ exposure time by compressing the flight from front to rear. Flexibility of control and action is facilitated, and

platoon integrity is maintained, wherein each platoon is placed in a staggered trail formation with platoons abreast to form the company. This ability to split down the middle and maintain a control element with each platoon offers other advantages. The two platoons may use different approach routes converging at a predesignated point prior to reaching the LZ. The formation is ideal for troop loading from each side of the stage field simultaneously. In the vicinity of the LZ this formation permits maximum use of door gunners."

#### Lesson Learned

"During Airmobile Operations, the airmobile company commander must place himself in the best position to exercise command and control of his unit. This may or may not be in the lead aircraft of the formation approaching the LZ."

#### Reference.

Subparagraphs 41d & 49c, FM 57-35, "Airmobile Operations."

#### 4. Incident/Observation.

"There are times when aircraft from many units must be pooled to execute a mass lift in addition to several ancillary missions; as it is especially important that the air assault be accomplished by a minimum number of multiple lifts, scheduled into the landing zone at the maximum rate that the LZ will accommodate."

#### Lesson Learned

"The use of a minimum number of multiple lifts greatly reduces the exposure time of aircraft and personnel, and facilitates the massing of combat power. This procedure provides the enemy with the least time to react to the landing. Upon completion of the mass lift specific units should then be allowed to revert to their separate pre-designated missions."

#### References.

Subparagraph 196b, FM 100-5, "Field Service Regulations-Operations," as amended.

Subparagraphs 47f(2), FM 57-35, "Airmobile Operations."



## 5. Incident/Observation.

"Despite the fact that many aircraft receive hits from enemy ground fire when flying at low altitudes. experience gained indicates that there are times when the best chance to successfully complete a mission is when the assault altitude, 50 feet absolute or lower, is used."

### Lesson Learned

"Situations which favor the use of assault altitude are:

- "a. When weather limits altitude to less than 2000 ft. absolute height.
- "b. Minimum restriction to friendly support fire is desired.
- "c. Maximum surprise is required.
- "d. Vector control aircraft are available."

### Reference.

Subparagraphs 49a, d, FM 57-35, "Airmobile Operations."

## 6. Incident/Observation.

"Most aviators have a tendency to make their approaches to pinnacles too shallow. This type of approach has three distinct disadvantages; it forces the pilot to operate in the area of maximum turbulence for a longer period during the approach, it restricts visual surveillance of the landing area at the critical period just before touchdown by requiring a flare, and lastly, full effect of the low reconnaissance (short final) is lessened by reduced visibility and lower angle of sight allowing less reaction time with which to abort, should it be necessary."

### Lesson Learned

"That initial entry for a pinnacle approach should range from normal to a steep angle of approach commensurate with wind conditions. This gives the aviator maximum advantage and reduces the possibility of error to a minimum."

Reference.

Paragraph 6.3, TM 1-260, "Rotary Wing Flight."

7. Incident/Observation.

"For the first time, this unit has employed CH-47 aircraft. The capabilities that this aircraft possess are essential to the aviation support required by the U. S. units supported. In addition to their primary role of lifting and resupplying artillery, they have been of immeasurable value to this unit by providing immediately responsive aircraft recovery. On several occasions recoverable aircraft would have been lost had they not been quickly recovered by the CH-47's. For one portion of the operation, the CH-47's were detached from this unit and made available on a mission request basis to the supported Infantry unit. This created certain problems in coordination and planning over which the Aviation Commander had no control. Support was not as responsive as desired by the Infantry and at one time during the occupation of a small LZ, aircraft landing was disrupted by the unexpected arrival of three CH-47's which were performing the artillery lift into the same LZ."

Lesson Learned

"That all Army aircraft with the possible exception of "Dust Off" (aero-medical evacuation helicopter) be under the operational control of the Aviation Commander responsible for aviation support to the operation. "

Reference.

Paragraph 6, FM 1-100, "Army Aviation," as amended.

## Section III

## Enemy Tactics

8. Incident/Observation.

"VC forces will usually defend valleys in mountainous regions. They select their positions carefully making use of slopes, natural caves, and overhangs. When these positions are attacked, the rocks and caves limit the effect of supporting fires, air and artillery, so that casualties inflicted on the enemy are difficult to determine. One method successfully used against these type positions was to move from the top end of the valley toward its mouth with flank security on the slopes of the valley. This direction of advance was unexpected to the VC, caught several of them in the open and blocked their line of retreat."

## Lesson Learned

"Advantage should be taken whenever possible of approaching known VC positions from unexpected directions."

Reference.

Paragraph 28, FM 7-15, "Rifle Platoon and Squads Infantry, Airborne and Mechanized."

9. Incident/Observation.

"The following is a quote from a VC captured document: 'The enemy sweep was different this time. Their firepower was more violent, and they used new tactics. For this reason, our forces moved forward discouraged and afraid. The health of our forces was poor, because they were continuously active. Confidence was not high (especially among the guerrillas). Combat hamlets, hampered by the floods and bombings, were not reinforced. We did not have experience fighting Americans and Koreans, and did not grasp their weak points in strategy and tactics. Because we could not determine enemy strong points and weak points, our forces were demoralized and afraid. These were our difficulties: The enemy was very destructive. Our demoralized masses, cadre, and guerrillas left the villages, and we lost support. The forceful enemy attacks split us up, and we lost contact with some villages and districts. During the early stages we lost contact from district to province. While the enemy conducted a

big sweep and was destroying violently, the masses were further demoralized by the lack of cadre confidence, and the nonchalant soldiers who ran far away (this is our principal difficulty). "

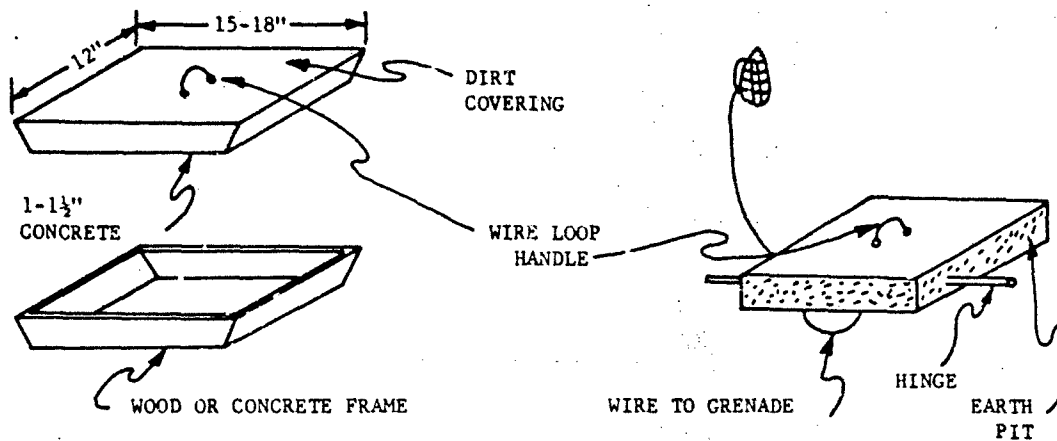
#### USCONARC Comment

The above extract is reproduced to point up the reaction of VC in one area to having to fight against trained soldiers supported by modern firepower.

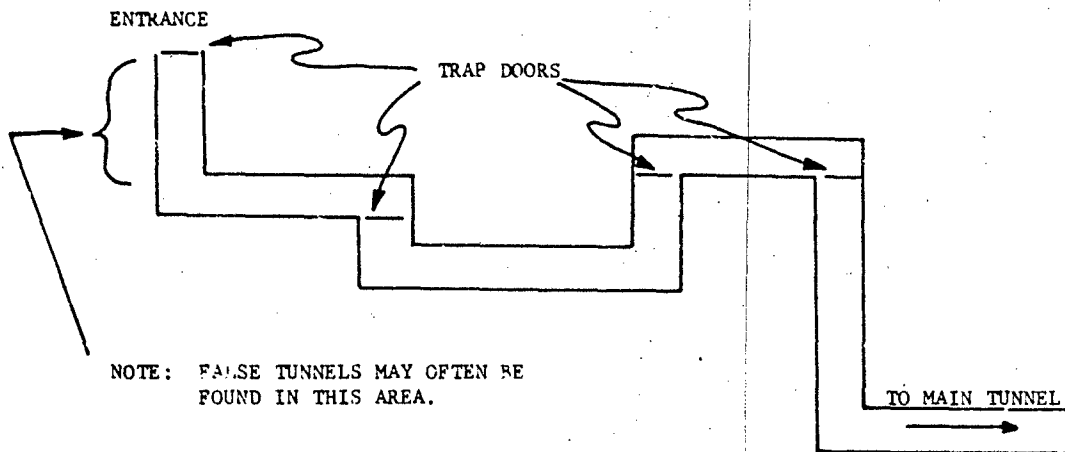
#### 10. Incident/Observation.

"Tunnel/bunker complexes are used extensively by the VC as hiding places, caches for food and weapons, headquarters complexes and for protection against air attack and artillery fire. Many of the tunnel/bunker complexes are the result of many years of labor, some in all probability having been initiated as early as World War II, with extensions and improvements added throughout the campaigns against the French, and up until the present time.

"The first characteristic of a tunnel complex is the superb use of camouflage. Entrances and exits are concealed, bunkers are camouflaged and even within the tunnel complex itself, side tunnels are concealed; hidden trap doors are prevalent and dead end tunnels are utilized to confuse the attacker. Spoil from the tunnel system is normally distributed over a very wide area, but it may be left in piles close to an entrance or an exit in natural growth. In many cases, a trap door will lead to a short change-of-direction or change-of-level tunnel, followed by a second trap door, a second change-of-direction and a third trap door opening again into the main tunnel. Trap doors are of several types; they may be concrete covered by dirt, hard packed dirt reinforced by wire, or a "basin" type consisting of a frame filled with dirt. This latter type is particularly difficult to locate. Usually trap doors covering entrances and exits are a minimum of 100 meters apart. Booby traps are used extensively both inside and outside entrances and exit trap doors. Grenades are frequently placed in trees adjacent to the exit, with an activation wire which may be pulled by a person underneath the trap door or by movement of the trap door itself. Typical trap door configurations are shown in Sketch 1.



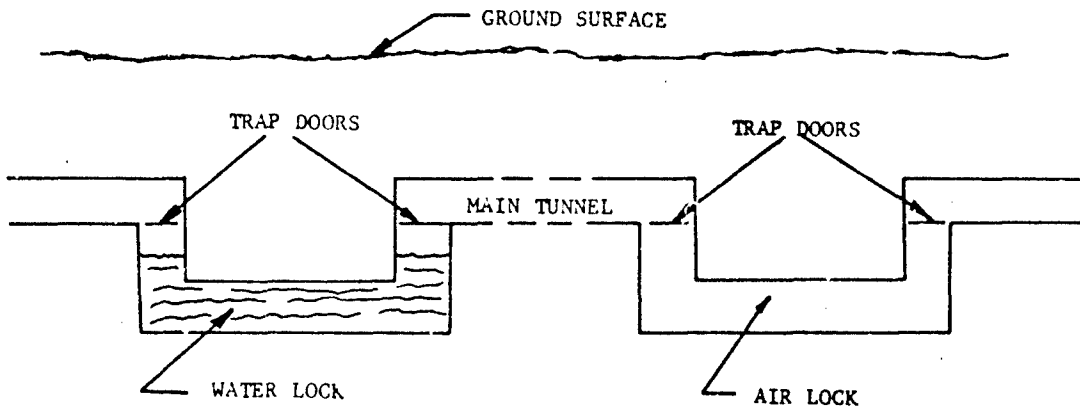
The following typical elevation view of a tunnel entrance section illustrates use of trap doors:



NOTE: FALSE TUNNELS MAY OFTEN BE FOUND IN THIS AREA.

Sketch No 1

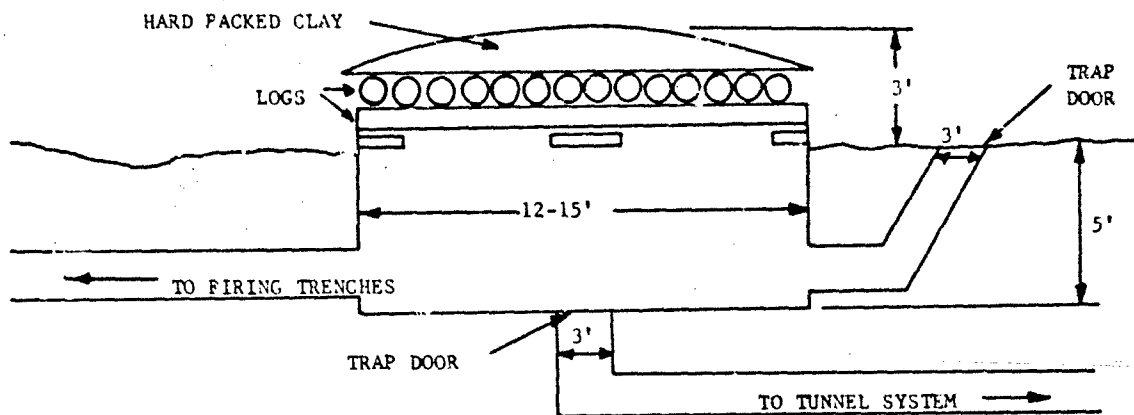
In some cases tunnel complexes were multilevel with the storage and hiding rooms generally found on the lower levels. Entrances to these are through concealed trap doors and secondary tunnels. Drainage is provided by seepage pits, and these are often booby trapped with explosives or punji sticks. In some cases air shafts are dug from the inside by using rodents who burrow to the surface and provide a functional air shaft which is extremely difficult to detect. Another tunnel characteristic of note is the use of air or water locks which act as "firewalls", preventing blast, fragments, gas or smoke passing from one section of the tunnel complex to another. Use of these "firewalls" is illustrated in sketch No 2.



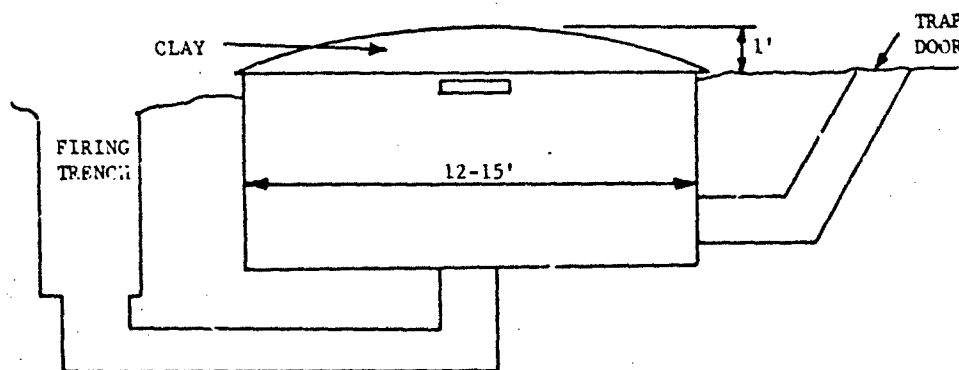
Sketch No 2

"Many tunnel complexes which are interconnected, have the connecting tunnels concealed by trap doors, or blocked by three to four feet of dirt and these connected tunnels are only known to a selected few persons and are only for use in an emergency. Bunker construction is illustrated in Sketches No 3, 4 and 5.

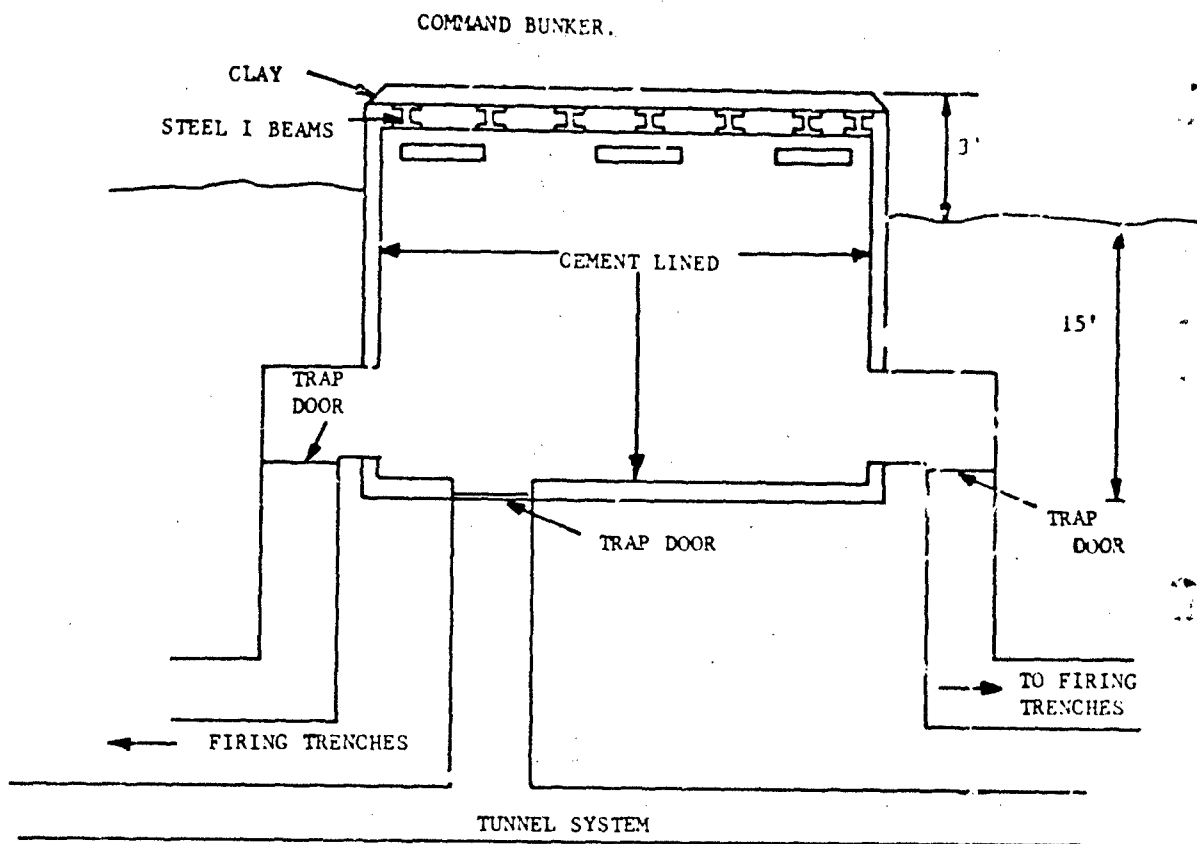
Bunker raised three feet with four firing ports.



Bunker raised approximately one foot with one firing port.



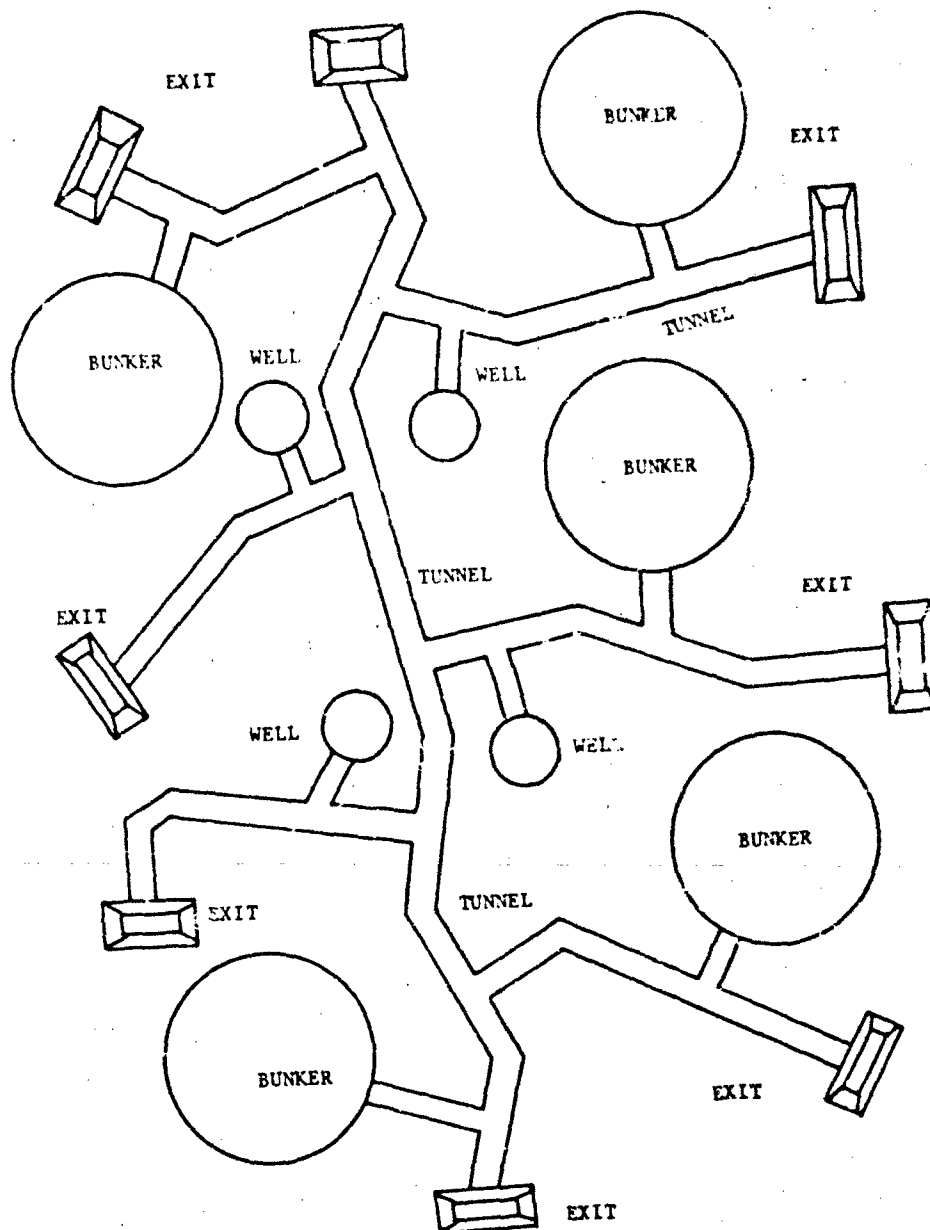
Sketch No 3



Sketch No 4



"Integration of these bunkers into a "fighting" complex is illustrated by the following diagram apparently used as a guide for VC construction."



Sketch No 5

### Lessons Learned

"A trained tunnel exploitation and denial team is used to insure the denial of tunnel systems to the enemy. Untrained personnel may miss hidden tunnel entrances and caches, take unnecessary casualties from concealed mines and booby traps, and may not adequately deny future use of the tunnel complex to the enemy.

"Tunnel teams should be trained, equipped, and maintained in a ready status to provide immediate expert assistance when tunnels are discovered. Careful mapping of a tunnel complex will often reveal other hidden entrances as well as the location of adjacent tunnel complexes and underground defense systems.

"Personnel exploring large tunnel complexes should carry a colored smoke grenade to mark the location of additional entrances as they are found. It is often extremely difficult to locate the positions of these entrances in dense jungle without the use of smoke.

"Two man teams should enter tunnels for mutual support. The second man can assist the first in emergencies. Small caliber pistols or pistols with silencers are the best weapons for use in tunnels as larger caliber weapons may collapse sections of the tunnel when fired and/or damage eardrums. Constant communication between the tunnel and the surface is essential to facilitate tunnel mapping and exploitation.

"Members of tunnel teams should be volunteers. Claustrophobia and panic could well cause the failure of a team's mission.

"Since tunnel complexes are carefully concealed and camouflaged, search and destroy operations must provide adequate time for a thorough search of the area to insure the location of the complete tunnel system. Tunnels are frequently outstanding sources of intelligence through the medium of abandoned documents.

"The presence of a tunnel complex within or underneath an area of operations poses a continued threat to all friendly troops in the area. No area containing a tunnel complex should ever be considered completely cleared."



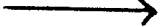




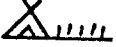
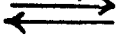

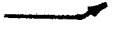
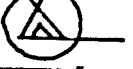

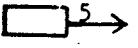









### Reference.

Paragraph 26, Section V, CON Pam 350-30-2, "Operations - Lessons Learned."

11. Incident/Observation.

"The VC are known to use a system of signs to provide instructions to guerrillas and units. These signs are depicted in Sketch No 6.

VC WALKING MARKS

	Start		This way to river
	Follow this way		Water falls 100 meters
	Quickly		This way to camp
	Slowly		10 meters to camp
	Return		Camping area
	Turn Left		Camp here
	Turn Right		5 meters to letter
	Danger		Letter on tree
	Safety		Unhealthy
	Enemy Ahead		Prohibited road
	Water well		
	Divide into two groups		
	Wait a few minutes		

Sketch No 6

## Lessons Learned

"Knowledge of the use of signs used by the enemy will assist units both in search and destroy missions, and in setting up of ambushes in locations likely to afford the best results."

Reference.

Subparagraph 116a, FM 21-50, "Ranger Training and Ranger Operations."

12. Incident/Observation.

"Several unusual things occurred. The enemy was using tree houses for look-out positions. Men were actually shot from the trees on two different occasions. A woman was used as a reconnaissance element. Although our men did not fire upon her, both times she was observed immediately after contact was made with the enemy. In one instance our outpost fired too soon dispersing the enemy rather than destroying him. However, only a short time later one of our machine gunners held his fire until the enemy was right upon him. When he began firing, five enemy were killed in a matter of seconds with the closest falling only six feet from the gun position. As the Task Force turned South one company walked into an enemy ambush deployed on each side of a creek bed. This ambush consisted of two machine guns and one platoon of riflemen. Good observation and quick reaction on the part of our men completely threw the ambush force into confusion after it had suffered considerable damage. Two enemy bodies were found in the ambush site and two enemy weapons were recovered. Considerable amounts of blood in the area indicated that there were more casualties than those two. We got out of the ambush with only three men slightly wounded."

Lesson Learned

"The quick reaction on the part of our leading echelon, our heavy volume of fire and the rapid movement of our individuals into the enemy positions materially reduced the effectiveness of the ambush."

References.

Paragraph 37, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 66, FM 21-50, "Ranger Training and Ranger Operations."

Paragraph 42, FM 31-30, "Jungle Training and Operations."

### 13. Incident/Observation.

"Company A was moving down from the high ground to the open field in a two up and one back formation, and they ran into a classic "L" type ambush. From description, this must have included at least two different VC companies, because they had two different uniforms. The VC to the front along the base of the "L" wore fatigues, steel helmets and packs on their backs. Along the stem of the "L" to the left flank of A Company, they wore khakis with blue bandannas on their heads. Now actually A Company discovered the VC first. The left front platoon man crossed a small trail and noticed that the brush was bent down recently across the trail, so he got down on his hands and knees and crawled across the trail. When he got up he saw a VC in khakis moving away. The point man jumped up and shot the VC, and this triggered the VC on the base of the "L" to fire. These VC were not dug in; they were lying on the ground. However, they had placed mines out in front of them, and grenades were put up in trees where they could be pulled to go off in the air, so the position was well protected. The right front platoon got into the fight, and deployed to conduct an assault to the front. Just as the platoon started to get ready to assault, the VC along the stem of the "L" to the left opened up, and the platoon got caught in a cross fire. There were at least two automatic weapons across the front, and another opened up near the rear of the stem. The assault failed, as it was pinned before it got started. The commander of the rear platoon, was told to move around to the left and assault the stem of the "L", which he did successfully. He moved out, deployed, assaulted, and forced the VC, along with the heavy machinegun, out of their prepared positions."

#### Lesson Learned

"The above incident is a good example of a typical VC "L" shaped ambush action. The success attained by friendly forces in this instance can be attributed to rapid and aggressive reaction, and use of the reserve against the enemy's weak flank."

#### References.

Paragraph 37, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 66, FM 21-50, "Ranger Training and Ranger Operations."

Paragraph 42, FM 31-30, "Jungle Training and Operations."

14. Incident/Observation.

"Several potential suitable LZ's reconnoitered by friendly forces had VC prepared positions in the tree lines in their periphery."

## Lesson Learned

"The selection and preparation of several LZ's in the immediate vicinity appears to be in order to prevent tipping our hand as to the actual landing site. Deceptive measures such as false landings designed to draw off VC forces should be practiced. Landing at one of the alternate LZ's when engaged must be routine. Whenever a single airlift element lands, the remainder of the force must, however, be committed to reinforce and hold the area once we have begun the operation. We must not move to alternate LZ's until those forces landed in early lifts are strong enough to protect themselves."

Reference.

Subparagraph 46a, FM 57-35, "Airmobile Operations."

15. Incident/Observation.

"At 120605 Nov 65 the enemy attack began with approximately fifty to sixty 60mm mortar rounds falling into the perimeter occupied by friendly forces. These elements were deployed as shown in Sketch 7. The mortar barrage continued for 10 minutes. At 120616 Nov 65 the mortar fire was joined by a continuous hail of automatic weapons and small arms fire. This was followed by the first VC Infantry assault which came under the continuous mortar and automatic weapons supporting fires. By this time the Cavalry Troop had sustained casualties resulting from a 4.2 inch mortar personnel carrier being destroyed by direct hit from VC mortar attack.

"The VC ground attack consisted of 3 secondary efforts, in a counter-clockwise sequence, in support of the main assault. The first assault came from the jungle and rubber trees to the south of the perimeter, on the west of the road. Here the VC Infantry crawled through the waist high bushes of the peanut field under their mortar and automatic weapons fire. Individuals then charged the wire in an effort to penetrate the perimeter. These efforts were repeatedly smashed by the 50 cal machineguns mounted on the APCs. The enemy then assaulted to the west from the east side of Hwy 13. This attack was repulsed by 50 cal fire and the Infantry fire along that portion of the perimeter.

"The main assault came from the north out of the village at approximately 120700 Nov 65. The VC had dug recoilless rifle and automatic weapons positions into the berm that ran from east to west on the southern edge of the village. The enemy mortar positions were located within the village behind the protected positions created by this berm. The enemy made good use of these protected positions in supporting their main attack.

"The main VC attack from the north was halted at the row of concertina wire by the combined fire of machineguns and rifles. During the period from 120700 to 120730 Nov 65 the Artillery Btry fired 55 rounds direct fire at point blank range against the attacking VC using 2 second delay fuses. Even though faced with this wall of steel one VC suicide squad penetrated the perimeter during this assault and threw a grenade into the No 1 Howitzer position killing 2 personnel and wounding 4 others.

"During the period 120645 to 120700 Nov 65 the airborne FAC arrived with a flight of A1H Skyraiders and expended their bombs and 20mm cannon in the wooded area north of the Battalion position. Once it was determined that the recoilless rifles were located in the berm and that the mortars were in the town permission was given to strike the village. The berm was hit first by a flight of A4 Skyhawks from a US Navy carrier. This was followed by a flight of Skyraiders SPAV 41's which used 500 lb bombs and CBU followed by napalm against the recoilless rifle positions. In the meantime, the Artillery Btry fired 22 rds direct fire into the berm and an additional 40 rds into the village. At approximately 120900 Nov 65 the VC renewed their main attack from the village at which time the Artillery Btry fired an additional 65 rds point blank fire into the attacking ranks. At this time a 5th flight of aircraft F-100 arrived and placed napalm directly on the attacking VC and the village mortar positions.

"At the end of the day, 198 VC bodies were counted in close proximity to the perimeter."

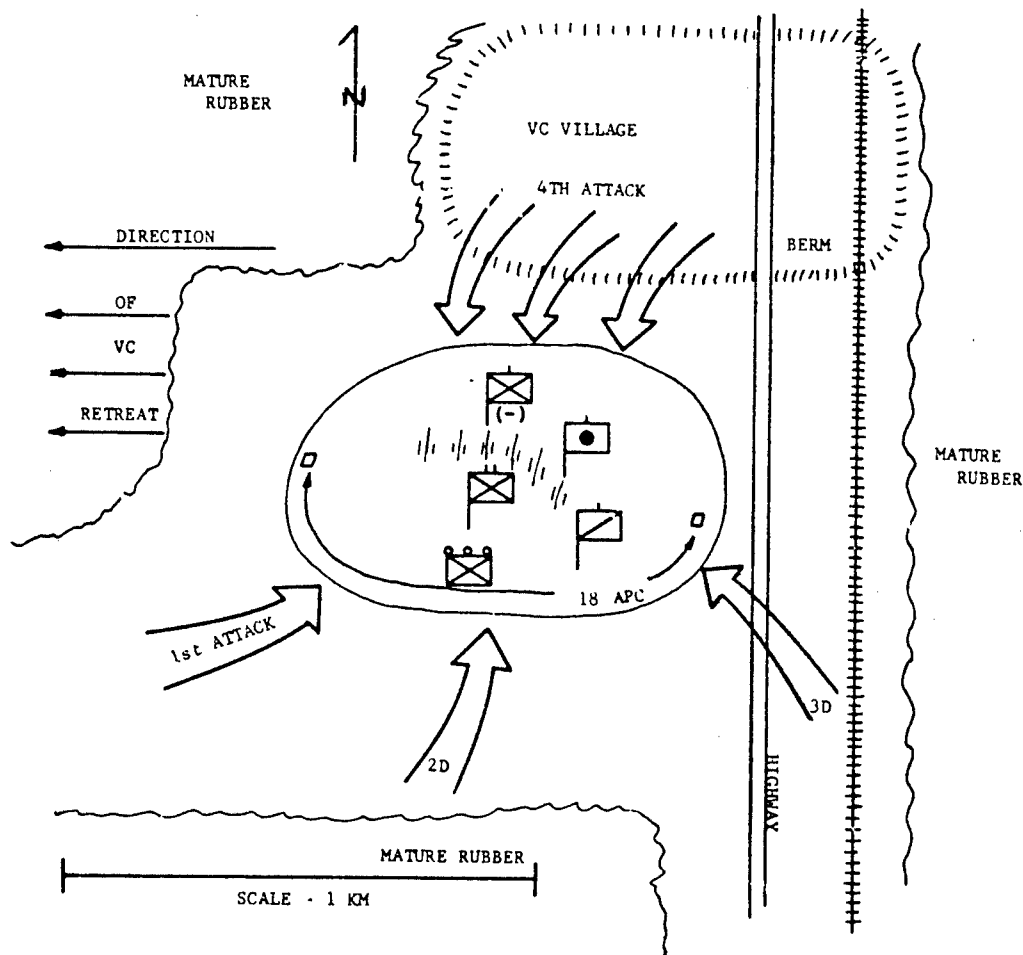
#### USCONARC Comment

It will be noted from sketch 7 that friendly forces had taken up a perimeter defensive position for the night in close proximity to a VC village. The VC attacks in the early hours of the next morning were obviously initiated and directed from this village. It is noteworthy that friendly forces were able to repel all the VC assaults against the perimeter positions by making full use of all available supporting fires.

It should be noted that when the VC fails in an attack in one area, he does not hesitate to launch successive attacks in other areas in an attempt to find weak points in the defense. It is of interest to note that the VC allowed friendly forces time to develop their defensive perimeter before launching his first dawn assault. It may be assumed that the initial number of VC located in the village did not consider they had sufficient strength to launch an attack until more reinforcements had been brought in, and that they only launched their attack when they felt they had sufficient numbers to obtain success.

Reference.

Subparagraph 71a, d(4), (5), FM 31-30, "Jungle Training and Operations."



Sketch No 7



## Section IV

## Basic Tactics - Friendly Forces

16. Incident/Observation.

"Frequently casualties have been caused by punji sticks, by snipers firing from trees, and by lead elements tripping booby traps."

## Lesson Learned.

"The use of two man teams operating on the "Buddy" system has helped considerably to reduce the occurrence of these incidents. One member of the team watches the ground primarily for punji sticks and booby traps, while his buddy searches the trees and the area to the front and flanks on the lookout for snipers."

Reference.

Paragraph 40, FM 31-30, "Jungle Training and Operations."

17. Incident/Observation.

"A search light was placed in a position where it could provide illumination on call. A patrol operating in an area coordinated with the search light section chief and on the same radio frequency used a code word when illumination was required. The search light section provided immediate indirect illumination over the patrol's location."

## Lesson Learned

"Indirect illumination by search lights can be used for a variety of purposes. The method described above provides patrol leaders with immediate illumination on call. The advantage of indirect illumination used in this manner provides the patrol leader with an additional surprise weapon to use against the enemy."

References.

Subparagraphs 37b(8), FM 7-15, "Rifle Platoon and Squads; Infantry, Airborne, and Mechanized."

Subparagraphs 63b(2), FM 6-115, "The Field Artillery Searchlight Battery."

18. Incident/Observation.

"Units, when preparing for vehicle movements, should plan to make the maximum use of organic weapons in the planning of supporting fires in the event of an enemy ambush."

## Lesson Learned

"The 81mm Mortar maintained in a firing position on its 3/4 ton truck can be gainfully used to provide immediate fires in the event of an enemy ambush."

References.

Subparagraphs 30c(6), FM 7-15, "Rifle Platoon and Squads; Infantry, Airborne, and Mechanized."

Subparagraph 42b, FM 31-30, "Jungle Training and Operations."

19. Incident/Observation.

"The VC are well versed in the use of delaying tactics. Combat leaders must be able to rapidly determine the size of the force he has engaged."

## Lesson Learned

"Time lost in developing the situation may allow the enemy force to prepare an ambush, occupy defensive positions, or to escape. Once contact has been made, it must be maintained so as to keep the enemy off balance. Training must stress the importance of gaining and maintaining contact with the enemy. The rapid reporting of intelligence information will permit reaction by friendly troops."

Reference.

Paragraph 85, FM 31-16, "Counter guerrilla Operations."

## Section V

## Knowledge and Current Use of Weapons and Equipment

20. Incident/Observation.

"Considerable radio trouble was experienced during heavy rain from wet antenna wells and handsets."

## Lesson Learned

"Plastic bags will keep the handsets dry. In heavy rain antenna wells should be dried out frequently until a boot can be procured to keep the well dry."

Reference.

Paragraphs 139, 186, FM 24-18, "Field Radio Techniques."

21. Incident/Observation.

"Aircraft preventive maintenance can always be performed more effectively and adequately in the aviation unit maintenance areas. Aviation units that laager in field sites at night drastically reduce the capability of the crew chiefs to effectively perform preventive maintenance."

## Lesson Learned

"When tactical situation requires aircraft to laager with tactical unit, sufficient daylight hours need be allotted to accomplish required preventive maintenance."

Reference.

Paragraphs 11-13, 11-14, FM 1-10, "Army Aviation Organizational Aircraft Maintenance."

22. Incident/Observation.

"A unit which had removed its gas masks from waterproof bags in anticipation of the use of CS was subsequently pinned down by enemy fire in rice paddies, and the masks got wet. When the filter

pads of a gas mask become wet through immersion, they are non-effective in filtering chemical agents. The result was that the unit had to change all its masks."

#### Lesson Learned

"Troops are now required to keep masks in a waterproof bag when they are not using them. Masks should not be taken out of protective covering until they are required for immediate use."

#### Reference.

Paragraph 14, TM 3-4240-202-15, "Operator, Organizational, Field and Depot Maintenance Manual," as amended.

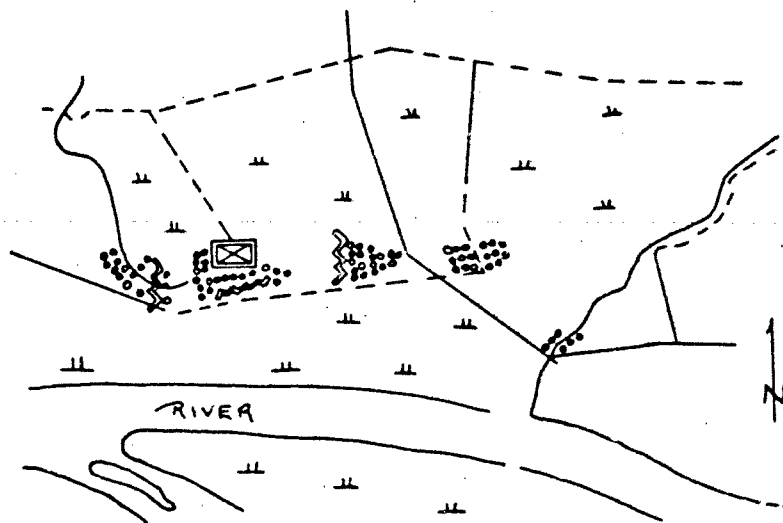
#### Section VI

##### Inquisitiveness and Alertness

#### 23. Incident/Observation.

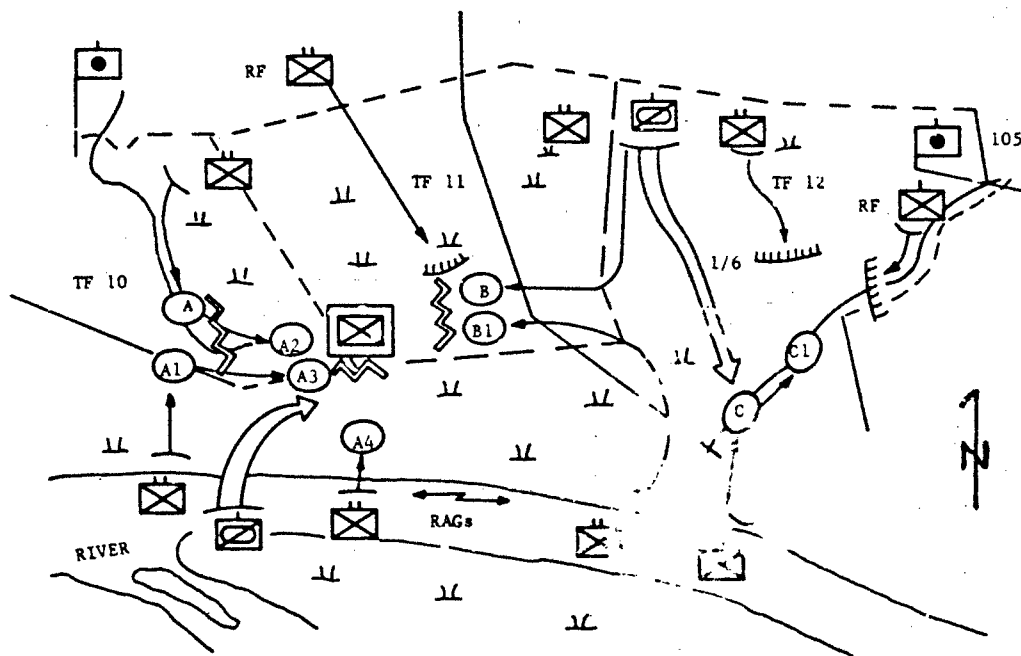
"The importance of rapid reaction to good intelligence and the fixing of an enemy force so that he may be effectively destroyed, cannot be over emphasized. Experience has shown that the enemy will not generally "stand and fight", when faced with a superior force aggressively employed. His tactic is to fade away into the bush in classic guerrilla fashion. Friendly forces must therefore plan to deny the enemy routes of escape and withdrawal. Three examples of combat actions at both large and small unit levels are given below:

"Example No 1: As a result of intelligence on the location of a VC battalion, a division operation was mounted against the enemy. The area of operations is shown in Sketch No 8.



Sketch No 8

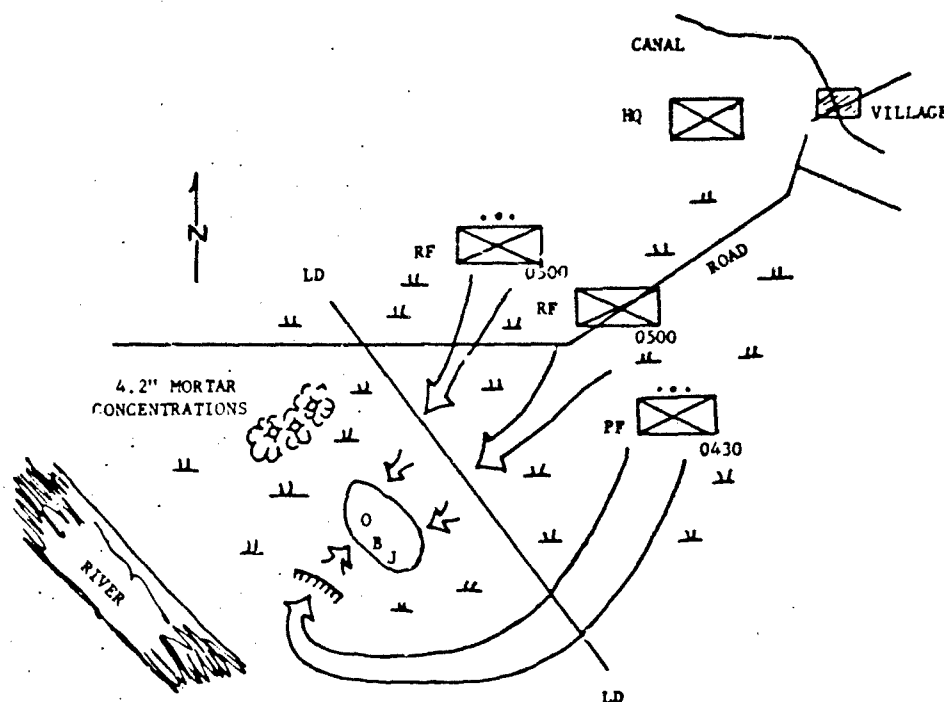
"The scheme of maneuver called for simultaneous assaults by three infantry battalions, the RF and recon battalions and an APC troop from the north; and three infantry battalions and an APC troop, landed by the river assault groups from the south with the objective of converging upon, surrounding and destroying the VC force as shown in Sketch No 9.



Sketch No 9

"Task forces crossed their respective LD's at 0900 hours and converged on the suspected VC position. The battle continued until 1200 hours the following day, with 181 VC killed in action and 10 VC captured.

"Example No 2: Reports were received of 20 VC in a prepared defensive position. A search and destroy operation was to be launched with one platoon moving to the rear of the enemy position to establish a blocking position. Mortar concentrations were planned onto a wooded area which might have accorded a possible avenue of enemy escape as shown in Sketch No 10.

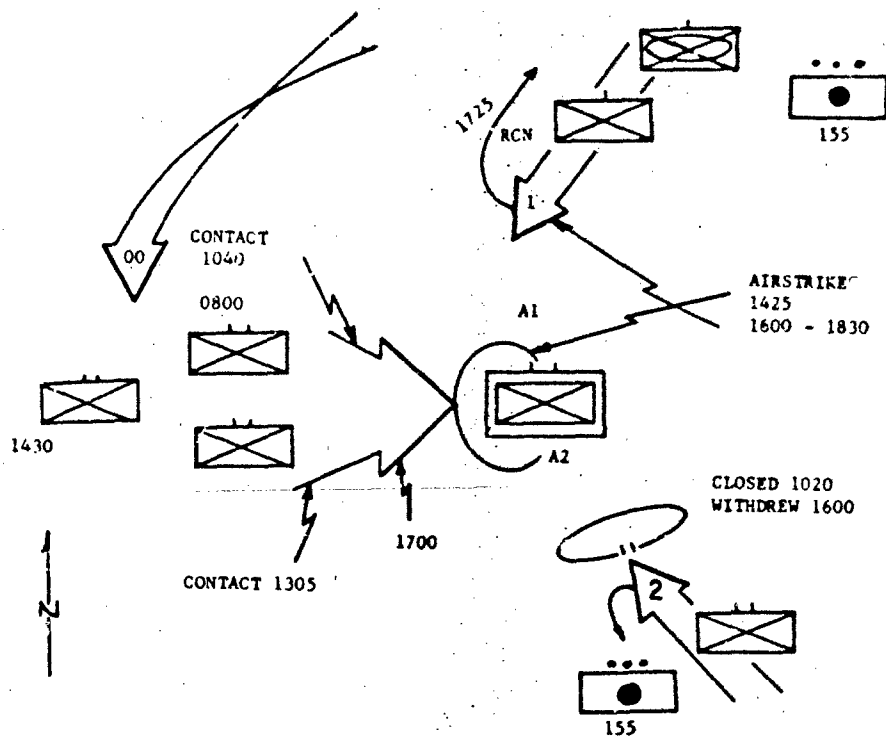


Sketch No 10

"The platoon designated to move to the blocking position was unopposed during its encircling movement. The company attacked, encountered heavy resistance on the left half of the objective, including foot-mines, punji pits and well prepared defensive positions. The assault was pressed and the main objective area was cleared. The result was 29 VC killed in action and 10 VC captured.

"Example No 3: Information was received fixing the location of a VC battalion. Friendly forces available for the operation were four

infantry battalions and one M113 troop. Tactical air, Army aviation and artillery support were available. The operation called for movement on the following day by the M113 troop and reconnaissance company south along axis 1, movement by one battalion northward along axis 2, and an airmobile assault into the objective area by three battalions as shown in Sketch No 11.



Sketch No 11

"Operations began in the morning as planned with neither of the ground forces meeting significant opposition but due to difficulties in negotiating terrain, progress was slow and both forces returned to base for the night. Meanwhile, the airmobile forces landed and experienced light contact by last light. The operation was continued on the following day and it was found that the VC forces had withdrawn during the night."

#### Lessons Learned

"To destroy the VC he must be decisively engaged by both fixing him and denying him withdrawal routes. Examples 1 and 2 illustrate planning by large and small units which effectively denied the VC a

route of withdrawal and allowed combat elements to surround and destroy him. When forces are not available to physically surround an enemy force, artillery or mortar fires may be used as substitutes.

"When reliable intelligence becomes available providing details on the size and location of a VC force an aggressive operation should be mounted making use of a combination of mobile and blocking forces while scout or recon elements cover all routes of escape or withdrawal.

"Schemes of maneuver must be flexible to insure immediate response to any operations which promise defeat and destruction of VC."

#### Reference.

Paragraphs 78-88, subparagraph 111a, FM 31-16, "Counter-guerrilla Operations."

#### 24. Incident/Observation.

"The importance of exploiting intelligence of immediate tactical value obtained from captured enemy documents is illustrated by the series of combat actions described below. Major success was achieved by utilizing information initially gained from the capture of one document and following up subsequent intelligence gathered during engagements with the Viet Cong.

"On 18 March 1966, an ambush patrol killed a Viet Cong Company Commander and captured a number of documents he was carrying, including one that directed four VC companies to establish a training base at a given location. The following day, a two company size force moved by foot toward the suspected enemy concentration. An assault on the objective, preceded by an intensive artillery and aerial bombardment, was launched at 211000 March and immediately encountered heavy opposition. The VC, occupying fortified positions on high ground, employed a high volume of automatic weapons and small arms fire causing friendly forces to withdraw to more favorable positions and await reinforcements. Contact with the enemy was continued with attacks between the numerous air strikes that were called in. At 211400 March, the friendly units were reinforced by an additional company and VC defenses began to crumble. By nightfall, the enemy had been driven from their positions and forced to flee the area. Total VC casualties were: 109 KBA, 21 KIA by ground action, with an undetermined number of VC wounded. No weapons or captives were



taken, indicating that this VC unit possessed a high degree of military discipline and training.

"A search of the battlefield uncovered documents that revealed the presence of a VC battalion command post to the south in a land development center. To exploit this information, two companies were alerted for a raid in strength. On 211315 March, following intensive airstrikes, this unit was airlanded by helicopter on the objective. Heavy contact with an estimated company of VC was immediately established. As the VC resisted stubbornly for more than two hours before they retreated, it is apparent that these troops possessed the same high degree of discipline as those engaged in the previous day's action. A total of 33 VC were KIA and 9 were captured.

"Evaluation of all intelligence acquired during these two operations and interrogation of the captives revealed the most likely infiltration routes used by the VC in their movement through this area. On the night of 30 March, a company established an ambush on one of these routes. At 2130 hours, an estimated VC battalion entered the killing zone from the south and, at the same time, a local VC platoon moved in from the north. Both VC units were immediately taken under intense fire by automatic weapons, small arms and three claymore mines. Enemy casualties from the initial burst of fire were apparently heavy but, recovering quickly, the VC returned fire and counter-attacked the friendly positions, both frontally and on one flank. These attacks were thrown back. Contact with the VC continued until 310100 March, with both sides using automatic weapons, small arms and mortars. 155mm artillery support and flare ships aided the outnumbered friendly force in holding back the VC. Again, the discipline of the VC was demonstrated by their evacuation of most of their dead, wounded and equipment from the battlefield. By 310115 March, all firing ceased as the VC broke contact and withdrew. First light revealed but 4 VC bodies and 1 wounded VC remaining on the scene. Numerous blood trails and other evidence of high VC losses were found. A number of rucksacks, 1 LMG mount, 1 mortar base plate and miscellaneous ammunition were captured. Friendly losses in these three actions were light."

#### Lessons Learned

"1. The three combat actions described were the direct result of rapid exploitation of a captured document containing information of immediate tactical value.

"2. Aggressive combat action on the part of friendly units involved resulted in an impressive victory and the decimation of three major VC units.

"3. The VC units engaged possessed a high degree of military training, discipline and morale as evidenced by:

"a. Refusal to withdraw until their positions became untenable.

"b. Removal of all wounded, many of the dead, and their weapons from the battlefield.

"c. Immediate action taken when ambushed.

"d. Utilizing suitable terrain for their base areas."

Reference.

Subparagraph 111a, FM 31-16, "Counter guerrilla Operations."

Section VII

Logistics and Combat Service Support

25. Incident/Observation.

"Neurosurgical and eye wound patients require immediate evacuation. Distance from areas of operations to hospitals often constitute a prohibitive turn around time for medical evacuation helicopters. Patients suffering from these type of wounds probably tolerate helicopter travel poorly."

Lesson Learned

"The practicability of the use of fixed wing aircraft in the evacuation of neurosurgical and eye wound patients should be considered with the aim of hastening the evacuation of the patients, and making the aerial evacuation helicopters readily available for further calls."

Reference.

Paragraph 55, FM 1-100, "Army Aviation," as amended.

## 26. Incident/Observation.

"The extreme hot climate in Vietnam poses several problems in the placing and curing of concrete. The hot sun beating down on foundations, gravel and sand, drying them to a point where the normal amount of water in a batch of concrete is insufficient to prevent rapid evaporation resulting in rapid curing and cracking of the concrete."

### Lesson Learned

"To help alleviate the problem, the foundation, gravel and sand are thoroughly saturated with water before placing the concrete thereby reducing the absorption rate. The amount of water in the mix is adjusted as required. Also, after the concrete has begun to set, earth dykes are placed around the edges and the pad flooded with water, thereby retarding the curing."

### References.

Paragraph 24, TM 5-615, "Repairs and Utilities: Concrete and Masonry."

Subparagraph 9a, paragraphs 67, 68, TM 5-742, "Concrete and Masonry."

## 27. Incident/Observation.

"The rainfall intensities in Vietnam require the construction of roads with high crowns and deep ditches. Laterite, which is widely used as a stabilizing material in road making, becomes extremely slick when wet."

### Lesson Learned

"All roads are particularly slippery after rain and drivers should be cautioned on the hazardous nature of laterite roads when they are wet. This particularly applies to single lane roads where the height of the crown is more pronounced."

### Reference.

Paragraph 73, TM 5-330, "Planning, Site Selection, and Design of Roads, Airfields, and Heliports in the Theater of Operations."

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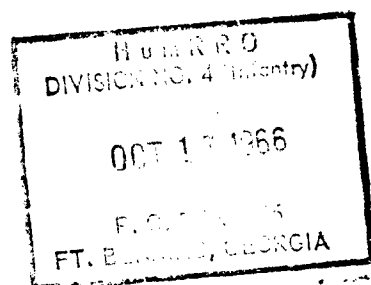
**DEPARTMENT OF THE ARMY PAMPHLET**

(USCONARC PAMPHLET 350-30-5)

**NO. 350-15-1**

# **TRAINING**

## **OPERATIONS - LESSONS LEARNED**



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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**OCTOBER 1966**

This is the first issue on "Operations - Lessons Learned" in Department of the Army Pamphlet 350-15-series. Subsequent pamphlets on this subject will be published on a quarterly basis and bear a subnumber to the basic number 350-15 for each issue. It is published in lieu of similar pamphlets formerly issued by Headquarters, United States Continental Army Command. Recipients should effect redistribution within their command as previously made for HQ USCONARC pamphlets on Operations - Lessons Learned (350-30-series).

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Pamphlet

No. 350-15-1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D. C., 15 October 1966

## TRAINING

## OPERATIONS - LESSONS LEARNED

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references to current training publications. Emphasis will be given to the close correlation of the contents of this pamphlet in unit training programs with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3 below.

2. General. Many lessons learned are being derived from operations in Vietnam, major field exercises, and other pertinent

sources. These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most of our doctrine is sound and is being correctly applied. This also indicates that in training certain principles must be continually emphasized and presented in such a manner as to insure full understanding and effective execution by units when the need arises. Headquarters, US Forces, Vietnam have commented, "While no really new techniques have been developed and the lessons learned are actually old lessons being relearned, probably the issue that demands our primary attention is the need for establishing a system that provides for immediately available reaction forces. This is especially pertinent in view of the limited number of contacts with enemy forces and the necessity to exploit a contact when one is made."

3. Objectives. The objectives are to--

- a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.
- b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.
- c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.
- d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.
- e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Orientation. The country of Vietnam varies considerably, ranging from open flatlands interspersed by rivers and canals to dense jungles and mountainous terrain. Headquarters, US Forces, Vietnam have stressed the point that "tactics and techniques which prove successful in a given area may not render the same results in all sections of the country." This factor should be borne in mind when reading "Lessons Learned." It accounts for variances in comments from commanders in the field. It points up the continued



requirement for flexibility and a readiness to adapt to the type of terrain so as to use it to the best advantage.

By Order of the Secretary of the Army:

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\* ARNG: Same as USAR

## Appendix I

### Lessons Learned, Combat Command Reports

#### Section I

#### Suggested Areas for Additional Training Emphasis

##### 1. Incident/Observation.

"Due to CONUS safety requirements, chiefs of howitzer sections have come to rely on the safety officer to check safety: thus, when placed in a combat situation, where a safety officer is not leaning over his shoulder, there is a period of adjustment until he (chief of section) learns that he is the safety officer and is entirely responsible for the accurate setting of firing data on the piece."

##### Lesson Learned

"During training every effort should be made to place increased responsibility for safety on the chief of section."

##### Reference.

Subparagraph 2(a), AR 385-63.  
Chapter 32, FM 6-40, "Field Artillery Cannon Gunnery."

##### 2. Incident/Observation.

"Most operations include the entry and search of villages and hamlets."

##### Lessons Learned

"Mock VC villages are a valuable aid to training. They should include purji stakes, pits, tunnels, bunkers and secret hiding places. Approach trails can include booby traps and man traps and the surrounding terrain should simulate the rice paddies and dikes common to most villages in Vietnam. Training and proficiency in village search techniques is one of the many important military skills required of our troops in Vietnam."

### Reference.

Paragraph 148, FM 31-16, "Counter guerrilla Operations."  
Paragraph 84, FM 31-30, "Jungle Training and Operations."

## Section II

### Joint Operations and Procedures for Airmobile Operations

#### 3. Incident/Observation.

"During all operations in heavily wooded and mountainous terrain the trooper ladder is used in operations ranging from fire team size to entire companies. The trooper ladder is 36" wide series of aluminum rods arranged as a ladder on three 4000 lb tensil strength cables. Each ladder is 100 feet long and can be reeled from a hovering CH-47 or UH-1D to permit personnel to descend or ascend through very small holes in the jungle canopy. When desired two trooper ladders can be joined together with rappelling snap links through the loops at each end of the trooper ladders. The ladder has been successfully used both at night and during the daytime. Trooper ladders are issued to the aviation units and are operated by the aircraft crew members."

#### Lesson Learned

"Units conducting airmobile operations should plan for the use of trooper ladders, and should when practicable practice this means of deployment on the battlefield."

### Reference.

Chapter 3, Section VI, FM 57-35, "Airmobile Operations."  
Paragraph 49b, FM 31-16, "Counter guerrilla Operations."

#### 4. Incident/Observation.

"Night helicopter assaults. Since daylight helicopter assaults are normally preceded by an air and/or artillery preparation, the Viet Cong may be afforded the opportunity, once the preparation begins, to evacuate the area, or assemble on the edge of the prepared area to attack the troop lift as it arrives. Night helicopter assaults, on unprepared but secured LZ's offer an excellent means of gaining maximum surprise. Using a force infiltrated into the area in advance,

the LZ may be observed, and then secured by the same force. Members of this force can also provide terminal guidance for the helicopters."

#### Lesson Learned

"Battalion night helicopter assaults with a secured LZ are feasible and desirable. Without the conventional preparation to alert them, the Viet Cong cannot respond quickly enough to prevent or obstruct the assault, and may frequently be caught completely by surprise and engaged before they can flee."

#### Reference.

Paragraph 18, FM 57-35, "Airmobile Operations."

Paragraph 38, FM 31-30, "Jungle Training and Operations."

Section I, Chapter 13, FM 1-100, "Army Aviation."

#### 5. Incident/Observation.

"Additional fire power on initial lift to LZ. A requirement for additional fire power to be employed as suppressive fires on the initial lift into selected landing zones was a primary concern to all units in the battalion. It was determined that more weapons could be placed in a position to deliver suppressive fires by changing the flight formation from the staggered trail to a heavy left or right in-trail formation. This formation places door gunners in four out of five aircraft in a position to deliver fire on the approach to the LZ."

#### Lesson Learned

"Flight formations should be used that provide the maximum use of available fire power during the initial approach to the LZ."

#### Reference.

Subparagraph 83(e)(5)(d), FM 1-100, "Army Aviation."

### Section III

#### Enemy Tactics

#### 6. Incidents/Observations.

a. "Plantations, jungle and lines of communication near populated areas are normally heavily booby-trapped. Few booby-traps

and mines are encountered in VC strongholds away from populated areas. The exception to this is along accepted avenues of approach into enemy areas which they consider secure. These access routes may be heavily mined and booby-trapped to prevent rapid movement into the area. Local VC, knowledgeable of the area, are used to guide the VC force units through the area safely.

b. The Viet Cong have recovered unexploded BLU3-Bomblets which they are using against our forces in an anti-personnel capacity. The bomblet is prepared to detonate by a rock which is attached to a cross bar stuck in the crotch of a tree or placed over forked sticks. Trip wires on the opposite end of the cross bar serve as the device to trigger the rock to fall on the exposed striker mechanism. The bomblets are also buried in the ground and easily detonated through the exertion of pressure."

#### Lessons Learned

"Units should be thoroughly aware of these techniques and fully indoctrinated in VC mine and booby trap tactics."

#### References.

Paragraph 66 and 67, FM 5-31, "Booby Traps."

Paragraph 17, CON Pam 350-30-3, "Operations - Lessons Learned."

#### 7. Incident/Observation.

"The VC normally evacuate their base camps when under attack. Frequently they do not have sufficient defenders to man all their defensive positions."

#### Lesson Learned

"The best type of attack employed against VC base camps is a wide enveloping maneuver. In this maneuver contact can be spread to secure points, thereby taking advantage of the inability of base camp defenders to man all defensive positions. Ambushes established to the flanks and rear of the VC positions will prevent anyone from fleeing."

#### Reference.

Paragraph 81-83, FM 31-16, "Counter guerrilla Operations."

8. Incident/Observation.

"The clearing of roads and trails of VC mines is only a temporary measure unless constant surveillance is maintained over the area. Experience has shown that the VC will return and replace the mines at the first opportunity."

Lesson Learned

"Roads previously cleared should not be considered secure unless constant surveillance is maintained or it is swept for mines immediately prior to being used."

Reference.

Paragraph 63, FM 31-16, "Counter guerrilla Operations."  
Paragraphs 62 and 63a(4), FM 7-20, "Infantry, Airborne Infantry and Mechanized Infantry."

9. Incident/Observation.

"The VC frequently use churches, pagodas and graveyards for sanctuaries. They also will fight from these areas where Americans are prone to be less alert or where they do not search extensively due to their social training."

Lesson Learned

"Personnel must be trained to remain constantly alert and to search all areas thoroughly regardless of social or religious implications."

Reference.

Section V, Chapter 2, FM 7-20, "Infantry, Airborne Infantry and Mechanized Infantry Battalions."

10. Incident/Observation.

"NVA troops usually do not distribute mortar fire throughout our positions. Their units generally use mortar fire only in front of their route of attack and frequently in a creeping pattern."

#### Lesson Learned

"The creeping pattern of the mortar bursts will often pinpoint the area to be assaulted and observation of this pattern assists in the preparation of the defense."

#### 11. Incident/Observation.

"During two recent operations a unit found a number of extremely small spider holes which provided a considerable degree of protection from TAC air and artillery fire. The holes were so small that the VC left their pack outside the spider hole."

#### Lesson Learned

"When this type of position is used the packs left outside the position provide friendly ground forces a means of detecting the otherwise well camouflaged positions."

#### 12. Incident/Observation.

"Use of jungled and forested areas by the Viet Cong. It has long been thought that because of their superior knowledge of these areas, the Viet Cong habitually establish base areas deep in the interior. Recent operations have tended to disprove this belief. Apparently the Viet Cong do not regularly inhabit the interior of dense jungle areas, unless it is accessible by trail. Instead, they operate from bases within two to three kilometers of the periphery. When forced to retreat into the interior, the Viet Cong follow natural lines of drift such as streams."

#### Lesson Learned

"Operations should be planned to cover all known existing trails, and to block or search all streamlines, valleys, etc. Searches for base areas should be intensified along streams and trails and along the edges of heavily jungled areas."

#### Reference.

Paragraph 17, CON Pam 350-30-2, "Operations - Lessons Learned."



## Section IV

### Basic Tactics - Friendly Forces

#### 13. Incident/Observation

"Flares, artillery and mortar illumination must be used with care while in a perimeter defense."

#### Lessons Learned

"The untimely or misuse of illumination in the defense exposes friendly as well as enemy positions. The use of illumination should be secondary to the employment of night surveillance devices and employed only when necessary to repel a significant probe or attack."

#### References.

Subparagraph 90b, FM 7-15, "Rifle Platoons and Squads, Infantry, Airborne and Mechanized."

Paragraphs 213 and 214, FM 6-40, "Field Artillery Cannon Gunnery."

#### 14. Incidents/Observations.

"An operation, which the commander of a unit felt was the most successful by his unit since deployment, marked the first employment in Vietnam of the organic armored unit effectively combined with mechanized and regular infantry plus a reconnaissance element." The commanders' comments were:

a. "In operating against the Viet Cong, Armor must disperse and cover maximum terrain, not move in column."

b. "Tanks and mechanized vehicles must be used continuously to beat the bush, explode booby traps, and engage snipers. Tanks moving through heavy brush will assist in uncovering tunnel entrances."

c. "All well used trails and roads must be avoided, by at least 100 meters whenever possible."

d. "Command and control helicopters are a must for movement control of mechanized elements."

e. "When snipers fire, the mobility and shock action of armor must be immediately employed in order to run them down or cut them off from withdrawing through trenches. Infantry should immediately follow the armor, utilizing the cleared area made by the tracks."

f. "Snipers can be silenced during the night by using suppressive fire at irregular intervals. 90mm cannister is highly effective in this role as is a volley of artillery fire."

g. "A centrally located and reasonably secure area is mandatory to effect repair of damaged vehicles. Protection when evacuating Armor or mechanized vehicles will always be a problem, recovery vehicles must be provided."

h. "The need for a vehicular mounted compass for armored units is a special requirement when operating in heavy vegetation."

i. "Mechanized or armored units can clear a helipad for a single helicopter in lightly wooded areas in 15 minutes or less. This enhances the flexibility of the unit in selecting assembly areas."

#### Lesson Learned

"The effective use of a combined arms task force and coordinated supporting fires, although it presents special problems, will not only prevent friendly losses but will influence maximum destruction on VC forces and fortifications."

#### References.

Paragraph 8, FM 17-15, "Tank Units, Platoon, Company and Battalion."

Section V, Chapter 2, FM 7-15, "Rifle Platoon and Squads, Infantry, Airborne and Mechanized."

Paragraph 38, FM 31-16, "Counterguerrilla Operations."

#### 15. Incident/Observation.

"One artillery battery emplaced its guns in a "star" formation during a recent operation."

#### Lesson Learned

"In a situation where there are no friendly front lines and direction of fire may be in any direction, such a formation simplifies the

gunnery problem. The pattern of the bursts will give good area coverage regardless of the direction of fire."

Reference.

Chapter 4, FM 6-40, "Field Artillery Cannon Gunnery."

16. Incident/Observation.

"In many cases, the tactical situation and/or terrain does not permit the evacuation of captured VC rice caches."

Lesson Learned

"As an alternate to extraction of large rice caches, destruction may sometimes be indicated or required. This is a difficult problem and one which, as yet, has not been completely resolved. Attempts to burn rice with gasoline, white phosphorus and other incendiaries have been only partially successful. Rice spoilage kits (not yet available) appear to be suitable only for relatively small quantities. The method which seems most effective is to dump rice into a stream, into a rice paddy filled with water, or in rainy weather simply to scatter it on the ground to subject it to the deteriorating effects of water."

USCONARC Comment

Operational reports emphasize that whenever practicable every effort should be made to evacuate captured rice rather than to destroy it.

17. Incidents/Observations.

a. "During a recent operation one Brigade employed two techniques which proved quite successful."

(1) "One was used when a Bn was moving through jungle in a tactical march column. Normal security was employed to the flanks, front, and rear; however, it was known that the VC were following the unit at a distance to maintain contact and keep informed of its location and activities. The technique used was to halt the Bn for a break, an ambush of approximately platoon size then being established in the center of the Bn position where its establishment could not be observed by the VC trail party. The Bn then resumed its march, moving right through the ambush position. The

ambush remained in place waiting for the VC trail party to come up. This technique was used on two occasions and produced kills both times. The ambush remained in position until the Bn had moved off approximately 1,500 to 2,000 meters and then it picked up and trailed the Bn, hoping to get additional kills from VC who believed the US forces to have passed. "

(2) "The second technique involved placing the reconnaissance platoons of all Infantry Bns under Brigade control for the operation. This provided the Brigade commander with three highly mobile and flexible units with a great deal of firepower available to deal with the variety of situations which arise during an operation. These platoons were used to:

- (a) "Reinforce ARVN units operating with the Brigade and provide direct liaison with them."
- (b) "Investigate intelligence reports of VC activity within the area."
- (c) "Screen flanks and rear of Brigade elements."
- (d) "Provide route and area reconnaissance."
- (e) "Screen areas to be occupied by the Brigade."
- (f) "Provide armed escorts for supply convoys, Psy War/Civil affairs teams and Medcap patrols."
- (g) "Provide security for Brigade installations at night."
- (h) "Conduct village searches and establish highway check points."
- (i) "Show of force missions."

b. "In all operations conducted to date, the use of a blocking force in conventional disposition has proved to be only a partial success at best . . . ."

#### Lessons Learned

a. "The use of surprise and small ambushes against the VC can greatly increase the effectiveness of a major operation. Unit

Commanders should take advantage of their organizational flexibility to tailor forces for specific mission requirements."

b. "As it is known that the VC habitually use roads, trails and streamlines in their withdrawal, a better employment of a blocking force would be to place them in small but strong ambush positions on roads, trails and streamlines over a wide area to the rear and flanks of the VC position. The ambush forces should be backed up by a reaction force. This technique would also indicate the direction of withdrawal and facilitate further pursuit."

#### References.

Paragraphs 37 and 77, FM 31-16, "Counter guerrilla Operations."  
Paragraphs 40 and 41, FM 31-30, "Jungle Training and Operations."

#### 18. Incident/Observation.

"During recent operations units have frequently received fire from the far woodline when crossing an open area."

#### Lesson Learned

"Open areas should be crossed only when they are too large to be skirted. When a unit is forced to cross an open area available artillery and mortar fire should be used on the far woodline and in depth into the area in the direction of forward movement."

#### References.

Subparagraph 16d, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."  
Paragraphs 57 and 88, FM 7-20, "Infantry, Airborne Infantry and Mechanized Infantry Battalions."

#### Section V

#### Knowledge and Current Use of Weapons and Equipment

#### 19. Incident/Observation.

"Electrical equipment by its very nature is sensitive to many of the elements, not the least of which are heat, dirt, dust and

humidity. To combat these enemies of electronic equipment there are a variety of items within the inventory of the United States Army. Air conditioners effectively combat all three problems. A combination of electric fans and clean filters are a good substitute for air conditioners. First echelon maintenance helps prevent problems and errors and lessens the chance of a major breakdown. A shelter constructed over and/or around a shelter or van helps to overcome the heat problem. The Army has also developed semi-conductors substitutes for a few tubes that constantly fail due to excessive heat."

#### Lesson Learned

"Ingenuity along with initiative, and use of replacement parts, reduce circuit outages due to tropical climate."

#### Reference.

Paragraphs 180, 184-188, FM 21-18, "Field Radio Techniques."

#### 20. Incident/Observation.

"Recent reports indicate that the transistorized communication equipment have been failing, at a higher than normal rate. It is believed that loose or corroded vehicle battery electrical circuits have caused peak voltages destructive to transistorized radio equipment."

#### Lesson Learned

"The problem can be solved by compliance with daily preventive maintenance checks in appropriate Technical Manuals. Some of the preventive maintenance checks that should be used are: (1) Hold downs and cable terminals are inspected for cleanliness and tightness. (2) Battery post clamps should be inspected for cleanliness, greasing and tightness. (3) Battery post clamps showing evidence of distortion, or other mechanical damage, should be replaced."

#### Reference.

Chapter 11, FM 24-18, paragraphs 180, 184-188, "Field Radio Techniques."

21. Incident/Observation.

"The practice of using substitute radio repair parts and local part fabrications in the face of temporary shortages of authorized spare parts can decrease equipment operational deadline totals."

Lesson Learned

"The temporary use of an interchangeable repair part (i. e., tube, relay, etc.), after careful analysis has been made to determine that such substitution will not detract from the efficiency of the equipment operation, can often restore a significant portion of deadlined equipment to an operational condition."

Reference.

Chapter 19h, FM 24-18, "Field Radio Techniques."

22. Incidents/Observations.

a. "Generator noise in a unit area not only gives away the location of the unit but also helps to mask the sound of personnel attempting to infiltrate the position."

b. "Many of the recent generator breakdowns can be traced to the condensation of moisture inside the equipment."

Lessons Learned

a. "Noise was greatly reduced at the perimeter by consolidating generators in a revetted position near the center of the unit. Power cable extensions were required for several pieces of equipment. The generators were further muffled by extensive sandbagging."

b. "Cold generators should be run for at least ten minutes before applying a load. The circulation of air around the stator windings will tend to remove accumulated moisture."

Reference.

Paragraph 138, FM 24-18, "Field Radio Techniques."

Paragraph 94, FM 11-8, "Field Radio Relay Techniques."

23. Incident/Observation.

"Undesirable communications sites are frequently encountered in the flat and heavily forested areas in Vietnam. Utilization of suitable UHF radio relay can extend the effectiveness of UHF equipment far beyond the normal line of site range."

Lesson Learned

"Plans for operations must include provision for UHF radio relay units."

Reference.

FM 11-8, "Field Radio Relay Techniques."  
Section III, Chapter VIII, FM 24-18, "Field Radio Techniques."

Section VI

Inquisitiveness and Alertness

24. Incidents/Observations.

a. "Security of billets in urban areas. Terrorist attacks on billets in urban areas can be expected whenever the VC determine the routine followed by the security force. VC planning for major terrorist attacks includes extensive target surveillance, construction of a mock-up and detailed rehearsals. To provide aggressive security at billets the following measures must be taken:

(1) "Guards must be armed with weapons having automatic fire capability."

(2) "Alternate guard protective positions must be provided and used at irregular intervals for varying periods of time."

(3) "Guards should be made to wear steel helmets and armor vests during critical periods (2200 to 0600)."

(4) "Guards should be augmented at irregular intervals for varying periods of time."

(5) "VN employees must have clearances prior to employment."



(6) "VN POV's to include bicycles and motor scooters, must not be permitted inside US installations."

(7) "Physical security surveys of billets should be conducted periodically."

(8) "Physical barriers to control access to US facilities by personnel or vehicles are essential."

b. "Sentinel duty. Too frequently sentinels are inadequately trained for guard duty, improperly posted, and inadequately supervised and inspected."

(1) "Prior to assignment as a sentinel, an individual must:

(a) "Be oriented on the duties of a sentinel."

(b) "Be qualified with his assigned weapon."

(c) "Know his general and special orders."

(d) "Have an adequate rest period."

(2) "Prior to being posted as a sentinel, an individual must:

(a) "Be inspected for fatigue, sobriety, knowledge of general and special orders, and proper equipment."

(b) "Be thoroughly oriented as to the conditions and the current situation in the area."

(3) "Officers and NCO's of the guard must:

(a) "Rotate guards to various posts."

(b) "Require frequent communications checks."

(c) "Inspect sentinels on post for alertness and knowledge of general and special orders."

c. "Physical security in areas under construction. Construction programs that encompass permanent, protective fencing or enlargement of a protected area require special attention. The removal or replacement of established perimeter fencing during a period

of construction must not result in a loss of security. Construction periods require:

(1) "Increased vigilance over sensitive items of supply and equipment."

(2) "VN laborers must be previously cleared by MSS and under constant observation of US forces personnel."

(3) "Reduced effectiveness of protective fencing requires:

(a) "Additional lighting."

(b) "Temporary barriers."

(c) "Additional guards."

d. "Inadequate physical security plans. Failure to effectively organize available resources, personnel and equipment to provide optimum security results is being subjected to unnecessary hazards. Physical security plans must be:

(1) "Comprehensive in that perimeter security is continuous with defense in depth for critical facilities."

(2) "Integrated so that the installation security forces are an effective component of the installation defense force."

(3) "Coordinated so that maximum support is received from adjacent military organizations and civil authorities."

(4) "Supported by detailed disaster plans for both natural and man-made disasters."

#### Lessons Learned

a. "Successful defense of billets is directly proportional to the investment in personnel, materials and weapons. Security must be aggressive in nature."

b. "A sentinel must receive the supervision and support required for such a vital position."

c. "Physical security during construction must be stressed. The safety and security of personnel and materials cannot be left to the contractor."

d. "Physical security plans must include requirements dictated by local geographic conditions, personnel, equipment, and the mission."

References.

Chapter 26, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."  
Chapters 62 and 63, FM 31-16, "Counter guerrilla Operations."  
Section IX, Chapter 10, FM 7-10, "Infantry, Airborne Infantry, and Mech Infantry Battalions."

Section VII

Logistics and Combat Service Support

25. Incident/Observation.

"Base camp support units have been provided 81mm mortars and instructed in their use by qualified personnel to enable them to play a more positive role in static defense of base camp areas."

Lesson Learned

"Use of personnel from support units, equipped with the necessary weapons, to secure base camps allows full utilization of combat units for tactical missions elsewhere."

Reference.

Subparagraph 62(e), FM 31-16, "Counter guerrilla Operations."  
Paragraph 7, appendix V, CON Pam 350-30-1, "Operations - Lessons Learned."

26. Incidents/Observations.

a. "Old and New Casualties. Intermingling of New and Old casualties in surgical wards. Observations were made, in November and December 1965, that Newly arrived IRMA casualties were being received and sorted on the same ward where post-operative patients were being attended. This resulted in an adverse effect on the new casualties when they were able to observe prior to their surgical treatments some of the more seriously injured individuals on the wards. It was also readily appreciated that the mixing of the new

casualties with those previously received tended to make convalescing patients relive their own moments of anxiety and resulted in a generalized lowering of morale."

b. "Anesthesiologist. Casualties are most frequently received in sporadic inputs and above average amounts, requiring periods of "round the clock" surgery with surgical teams working in shifts for extended periods. For this purpose, surgeons, surgical nurses and technicians are sufficient to formulate such teams and prevent complete exhaustion of any given group. A single anesthesiologist compromises this concept."

#### Lessons Learned

a. "A separate ward for the receipt, triage and pre-operative resuscitation of newly arrived casualties has been put into operation. Post-operative patients are not taken back to the ward where many of their friends may still be waiting for definitive surgical treatment. This plan has resulted in a more satisfactory handling of the casualties and the beneficial results of this change have been readily appreciated by all concerned."

b. "Assignment of one (1) additional anesthesiologist to each operating hospital unit of a Field Hospital would alleviate this potentially limiting factor to the capabilities of the other personnel to perform at high standards for extended periods of time under emergency conditions. Exhaustion can be a critical factor in the ability of a surgical team to perform cohesively and render maximum lifesaving capabilities."

#### USCONARC Comment

a. Separation of pre-operative and post-operative surgical patients is not usually practical in nonmobile communications zone and zone of internal hospitals where surgery is mostly elective and restorative in nature. However, in mobile or semimobile hospitals located in the field Army area (such as mobile Army surgical hospitals (MASH) and evacuation hospitals) surgery is emergency and lifesaving in nature. Mixing of pre-operative and post-operative surgical patients in these hospitals does not normally occur.

b. A nurse anesthesiologist cannot normally perform day in and day out duty for more than a 12 hour shift without severe impairment of efficiency and professional judgment. To operate throughout a 24 hour day a field hospital needs two anesthesiologists.

27. Incidents/Observations.

a. "All unit records are required as soon as the unit arrives in Vietnam."

b. "On movement overseas, particularly Vietnam, most equipment will be placed in use soon after arrival."

Lessons Learned

a. "Unit records have been shipped in Red TAT and air shipment to follow the unit at a later date. This allows the possibility of records being lost or arriving in-country after they are required. All records should be carried as yellow TAT."

b. "To increase readiness and insure proper maintenance of records equipment log books should be packed and secured with the equipment to which they pertain."

References.

Subparagraphs 30(c) and 35(e), AR 220-10, "Field Organizations Preparation for Oversea Movement of Units (POM)."

## Appendix II

### Combat Tips

#### Combat Tips for Individual and Small Unit Training

1. "Individual and small unit training must be constantly emphasized by commanders. Teamwork must be stressed to the point that tactical execution is accomplished with the same precision as dismounted drill; that delivery of effective fire is as automatic as rifle drill; and that supply to the tactical unit is as responsive in battle as it is in garrison."

2. "In the absence of strong command influence, exercised through a strong chain of command, troopers will become complacent and grow lax. In counterinsurgency warfare one can never relax. Troopers must constantly be on the alert for enemy movement and ambush. One alert trooper can save a battalion. Our training must instill in our men an understanding of the need for alertness. To have alert troopers we must have alert leaders who never relax and who check, check, check . . ."

3. "Too many leaders are either blind to common errors or lack the force, drive or energy to see that they are corrected. These errors must be corrected with precision and accuracy. Every opportunity for training must be used. Each combat mission is a training mission, as well as a patrol, an attack or an assault. When possible, leaders correct mistakes noted during battle, and in all cases at the first respite following the battle, to prevent recurrences. Take maximum advantage of reserve, marshalling and stand-down periods. During these periods of training, the leader must develop the attitude that, "the more sweat on the training field, the less blood on the battlefield." The habits developed in training, good or bad, are the same habits which will be used in combat. Good habits and proper response must be so well drilled into our troops that under the stress of battle they will instinctively and immediately do the right thing."

4. "Tips for Small Unit Leaders: The basic difference between a proficient crack unit and one that is mediocre is the attention paid to the details and fundamentals of marksmanship, fire and maneuver, camouflage and concealment, communications, maintenance, administration, and all the other arts and skills of warfare that contribute to success in combat. The leader must constantly check personally to see that these fundamentals are followed. The following procedures, or "tips", demand the immediate and continuing attention of all leaders:

a. "Weaponry:"

"Rifles jamming and misfiring: Keep bores and magazines free of grit and mud. Check frequently."

"Fire control measures: Leaders must assign sectors of fire, PFF's, FPL's, and insure that each position has night firing stakes. Once assigned, they must be checked and verified. Leave nothing to chance or question."

"Fire discipline: When probed, call indirect fire immediately, then use M-79's, M-16's (semi-automatic), grenades, machineguns, and, finally, M-16's fully automatic (on order or signal)."

"Employment of machineguns: When possible, the company commander and/or platoon leader will select the gun positions. Weapons squad leaders will be prepared to do this, however, giving priority to the following:

"Maximum grazing fire across the company front."

"Be mutually supporting."

"Use maximum number of trip flares and trip grenades within the assigned sector along routes of approach and defiles."

"Gunners will:

"Fire only at profitable targets within the assigned sector."

"Fire short bursts."

"Make accurate range cards."

"When situation permits, pace distances and measure dead space."

"Not carrying weapons at the ready: Weapons must be kept ready for immediate action. Troopers in the left file carry the weapons aimed to the left flank; troops in the right file aim to the right flank. When on combat missions, keep the weapon at the ready at all times."

b. "Tactics:"

"Security during preparation of defensive positions:

Fifty percent dig and the balance observe to the front. All crew-served weapons will be manned. Leaders must specify who digs and who is on alert."

"Check trees for snipers: Treat every tree as if it held a sniper. Check it; don't wait for the sniper to shoot first."

"Firing positions during halts: When halted, make sure troops assume prone or kneeling positions, depending on terrain, and that they stay alert."

"Bunching up: Avoid the "herd" instinct. During daylight, five meters between troops is the rule. Close up at night but let the available light dictate distance between troops."

"Execution of ambush patrols: Experience indicates that in several cases, ambush patrols tripped the ambush too soon, allowing the VC to escape. Patience is a key virtue; wait until the enemy is in the killing zone - then hit hard."

"Patrol pointers:

"Rehearse."

"Take FO's."

"Plan for air support prior to departure."

"Take interpreters."

"Plan in detail; issue clear orders; check each man and insure that he understands."

"Estimate of the situation: A continuous estimate of the situation must be made. Situations change constantly; so should the leader's estimate. If the leader doesn't know, he should say so - don't bluff; but then find out."

c. "Fire Support:

"Plans: Must be in detail, and known by those who will use them. Leaders must be trained to recommend likely areas for H&I fires and concentrations to the commander."



"Calling and adjusting artillery and Tac Air: Leaders cannot depend on having FAC's or FO's available. They must know the procedures and be able to call for and adjust or direct artillery fire and air strikes."

d. "Mines and boobytraps:

"Familiarity with mines and boobytraps: Training is the key to effectively countering these hazards. Train the troops to recognize, avoid, and report the locations."

"Trip flares and trip grenades: Use on logical routes of approach, and insure squad leaders know how to set and disarm them."

"Use of Claymore mines: As a matter of standard procedure, Claymore mines will be employed on likely avenues of approach and in conjunction with ambush patrols."

e. "Communications:

"Knowledge of SOP: The platoon members should know company radio frequency and call signs. Each man should be familiar with the operation of the PRC-25. Any trooper can become a radio operator in battle. Ignorance costs lives."

"Signal for use in jungles: Specify a method. A cricket-type clicking device is useful. Do not yell and shout to maintain contact. Systems and devices don't just happen; they are prescribed and specified by a leader."

"Radio Operators: Use headsets to overcome the inattentive radio operator problem. When using the handset, rig a system so that the earphone hangs next to the operator's ear."

f. "Miscellaneous:

"Digging in: Prolonged halts and occupation of positions requires digging. Prone shelters are required as a minimum. The longer you stay in one position the deeper you dig, until the ideal position is attained. Leaders check each hole, verifying sectors of fire and correctness of position."

"Weapons accountability: In this unit, a trooper will never be more than arm's length from his weapon."

"Reports: All reports must be made on time, or as soon as possible, and must include who, what, when, where, why and how."

"Field Sanitation: Straddle trenches and cat holes must be used and covered. Feces draw flies, flies bring disease, disease renders your troops as ineffective as if struck by bullets."

"Care of the feet: Squad leaders must check their trooper's feet twice a day; medical aidmen check feet once a day. Each trooper must carry one extra pair of socks and keep them dry. Carry a pair of shower shoes to wear during breaks in combat to allow feet to dry. At first sign of immersion foot, evacuate promptly."

"Mail: When mail is received in the field, burn after reading."

Summary:

"Good training techniques breed battle proficiency. There is no sweatless solution, no magic formula to achieving and maintaining a high state of combat proficiency. Only by strict application of the pointers outlined above will we continue to accomplish our mission to WIN IN VIETNAM. Above all else, remember to STAY ALERT AND STAY ALIVE."

USCONARC Comment

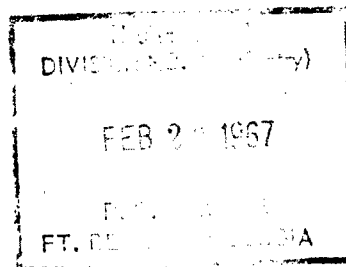
The above points are taken from a report of a battle hardened and battle trained unit. They are the points which the Commander felt required emphasis. Many of the items listed have been incorporated in previous "Lessons Learned," CON Pam 350-30-series. They are repeated here as they are deemed worthy of repetition, and provide a precis of a number of important lessons.

DEPARTMENT OF THE ARMY PAMPHLET

NO 350-15-3

(USCONARC PAMPHLET 350-30-7)

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# TRAINING

## OPERATIONS - LESSONS LEARNED

### (Alphabetical Index)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

15 FEBRUARY 1967

Pamphlet

No. 350-15-3

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D. C., 15 February 1967

TRAINING

OPERATIONS - LESSONS LEARNED  
(Alphabetical Index)

1. Purpose. This pamphlet provides an alphabetical listing of subjects which are contained in Operations - Lessons Learned. It will be used with the USCONARC Pamphlet 350-30-series numbers 1 through 4, and the continuation DA Pamphlet 350-15-series numbers 1 and 2.

2. General. This pamphlet provides a list of all the items covered in the first six issues. It is recommended that this pamphlet be filed with the "Training - Operations Lessons Learned" pamphlets to facilitate in the determination of those training techniques which may require further emphasis.

3. DA Operations Report Lessons Learned - 66-series. The covering letter of each issue of the DA 66-series provides the index for that series. These reports provide additional material which may be used for training guidance, generally of a more technical nature than the 350-15 series.

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By Order of the Secretary of the Army:

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DEPARTMENT OF THE ARMY PAMPHLET

NO 350-15-5

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# TRAINING

## OPERATIONS - LESSONS LEARNED

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HEADQUARTERS, DEPARTMENT OF THE ARMY

30 JUNE 1967

This is the fifth issue of "Operations - Lessons Learned" in Department of Army Pamphlet 350-15-series, and should be read in conjunction with previous issues in this series, and the USCONARC 350-30-series, Education and Training, Operations - Lessons Learned. Recipients should effect redistribution within their command as for previous issues.

Comments or suggestions concerning these pamphlets should be addressed to the Commanding General, United States Continental Army Command, Fort Monroe, Virginia 23351, Attention: ATOPS-TNG-TAE.

Pamphlet

No 350-15-5

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D. C., 30 June 1967

TRAINING

OPERATIONS - LESSONS LEARNED

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1. Purpose. This pamphlet presents a digest of the substantive comments of observers and commanders in operations and exercises emphasizing lessons learned and correlating those where appropriate to pertinent references to current training publications. Emphasis will be given to the close correlation of the contents of this pamphlet in unit training programs with doctrine and techniques as stated in current field manuals to insure achievement of the objectives stated in paragraph 3 below:

2. General. Many lessons learned are being derived from operations in Vietnam, major field exercises, and other pertinent sources.

These cite actions both correctly and incorrectly taken. The majority of the lessons are already clearly stated in current doctrine and techniques. Where they are not, they usually involve refinements peculiar to a particular area or situation. This suggests that most of the existing doctrine is sound and is being correctly applied. This also indicates that in training certain principles must be continually emphasized and presented in such a manner as to insure full understanding and effective execution by units when the need arises.

3. Objectives. The objectives are to--

a. Emphasize to commanders of all units the necessity to thoroughly study and apply realistically and completely in training and operations all the principles stated in current doctrine and techniques.

b. Indicate those principles and techniques needing special emphasis based on the environment, the type of operations, and the nature of the enemy.

c. Indicate to all personnel that principles stated in doctrine in specific situations must be further refined by the ingenuity and resourcefulness of the unit involved.

d. Assist commanders to inject in training realistic situations of the type being actually encountered in operations.

e. Improve interest and enthusiastic participation of individuals in training by reference to operations and actions that have actually occurred.

4. Orientation. The country of Vietnam varies considerably, ranging from open flatlands interspersed by rivers and canals to dense jungles and mountainous terrain. The former Headquarters, US Forces, Vietnam, stressed the point that "tactics and techniques which prove successful in a given area may not render the same results in all sections of the country." This factor should be borne in mind when reading "Lessons Learned." It accounts for variances in comments from commanders in the field. It points up the continued requirement for flexibility and a readiness to adapt to the type of terrain so as to use it to the best advantage.



## Appendix I

### Lessons Learned, Combat Command Reports

#### Section I

#### Suggested Areas for Additional Training Emphasis

##### 1. Incident/Observation.

"A survey of communications centers for one quarter shows that 34.2% of the total messages handled were of IMMEDIATE precedence. At one communications center, nearly 70% of the messages handled during a month were IMMEDIATE. IMMEDIATE precedence should be given to messages relating to situations which gravely affect the security of national/allied forces or populace and which require immediate delivery to the addressee. Since a communications center has no means of distinguishing between messages which are truly of IMMEDIATE precedence from those that have been assigned a precedence by the originator higher than that warranted, all messages are handled on a first-in, first-out basis. With continued abuse of the precedence system it is highly probable that messages which are truly in the IMMEDIATE category are being unnecessarily delayed by messages which have been assigned an unwarranted IMMEDIATE precedence."

##### Lesson Learned

"Maximum effort must be made in the control of precedence assignment to originated messages."

##### USCONARC Comment

Communications training and the correct use of message precedence priorities are subjects requiring special emphasis throughout training.

##### Reference.

Paragraph 91, CON Reg 350-1, USCONARC Training Directive, 17 June 1964.

##### 2. Incident/Observation.

"WIA personnel indicated they were wounded because all automatic weapons ran out of ammo at the same time and the crew had

no suppressive fire while they reloaded. This clearly dictates the need for control on firing automatic weapons."

#### Lesson Learned

"When a team or a vehicle crew has more than one automatic weapon they should closely control their fire during enemy contact so that there is always at least one automatic weapon firing while the others reload."

#### USCONARC Comment

In training emphasis must be placed on fire control and discipline to insure well aimed, effective fire and to conserve ammunition.

#### References.

Paragraph 21, appendix, DA Pam 350-15-4, "Operations - Lessons Learned."

Paragraph 4, appendix II, DA Pam 350-15-1, "Operations - Lessons Learned."

Paragraphs 16b and 19b, FM 23-12, "Techniques of Fire of the Rifle Squad and Tactical Application."

Paragraph 81b, FM 23-67, "Machine Gun 7.62mm, M60."

#### 3. Incident/Observation.

"When it initially became necessary for this unit to call in and direct the landing of helicopter medivac, it was found that there were no personnel who had knowledge of directing helicopter landings."

#### Lesson Learned

"Each unit should have at least three people familiar with directing helicopter landings. These people should be able to adjust for wind speed and to direct the helicopter accordingly."

#### References.

Chapter 5, section V, FM 8-35, "Transportation of Sick and Wounded."

Chapter 24, FM 1-105, "Army Aviation Techniques and Procedures."

#### 4. Incident/Observation.

"Recent photographs and personal observation of soldiers in Vietnam reveal that gunners and ammunition bearers of machine gun crews are carrying exposed linked machine gun ammunition rather than in bandoleers as prescribed. This malpractice exposes the ammunition to the elements and results in malfunctions of the weapon. This practice increases the observation capability of the enemy because of noise and light reflection off the exposed ammunition. The mobility of the crewman is also hampered when moving over obstacles or through dense vegetation" (fig 1).

#### Lesson Learned

"The proper procedure for carrying linked machine gun ammunition must be taught, practiced and emphasized in all types of training in order to eliminate this malpractice in operations" (fig 2).

#### Reference.

Paragraphs 55 through 58 together with figures 58, 59, 68, and 142, FM 23-67, "Machine Gun 7.62mm, M60."

#### 5. Incident/Observation.

"The engineer in counterinsurgency operations operates continuously in a hostile environment where speed and efficiency of performance pay high dividends in minimizing exposure. An isolated job site in Vietnam is no place to allow confusion or uncertainty in the techniques of the job at hand. A certain amount of time is well invested in training for specific engineer tasks during the preparation phase of a combat support mission. The validity of this philosophy has been repeatedly borne out on a wide variety of tasks over the past three months."

#### Lesson Learned

"Despite the press of many missions to be accomplished and heavy demands on the engineer soldier's time, a vital part of preparation for a combat support mission is training for the specific tasks anticipated."

#### 6. Incident/Observation.

a. "With adequate training and appropriate armament, non-infantry units can be used to provide required security for convoy



Figure 1.

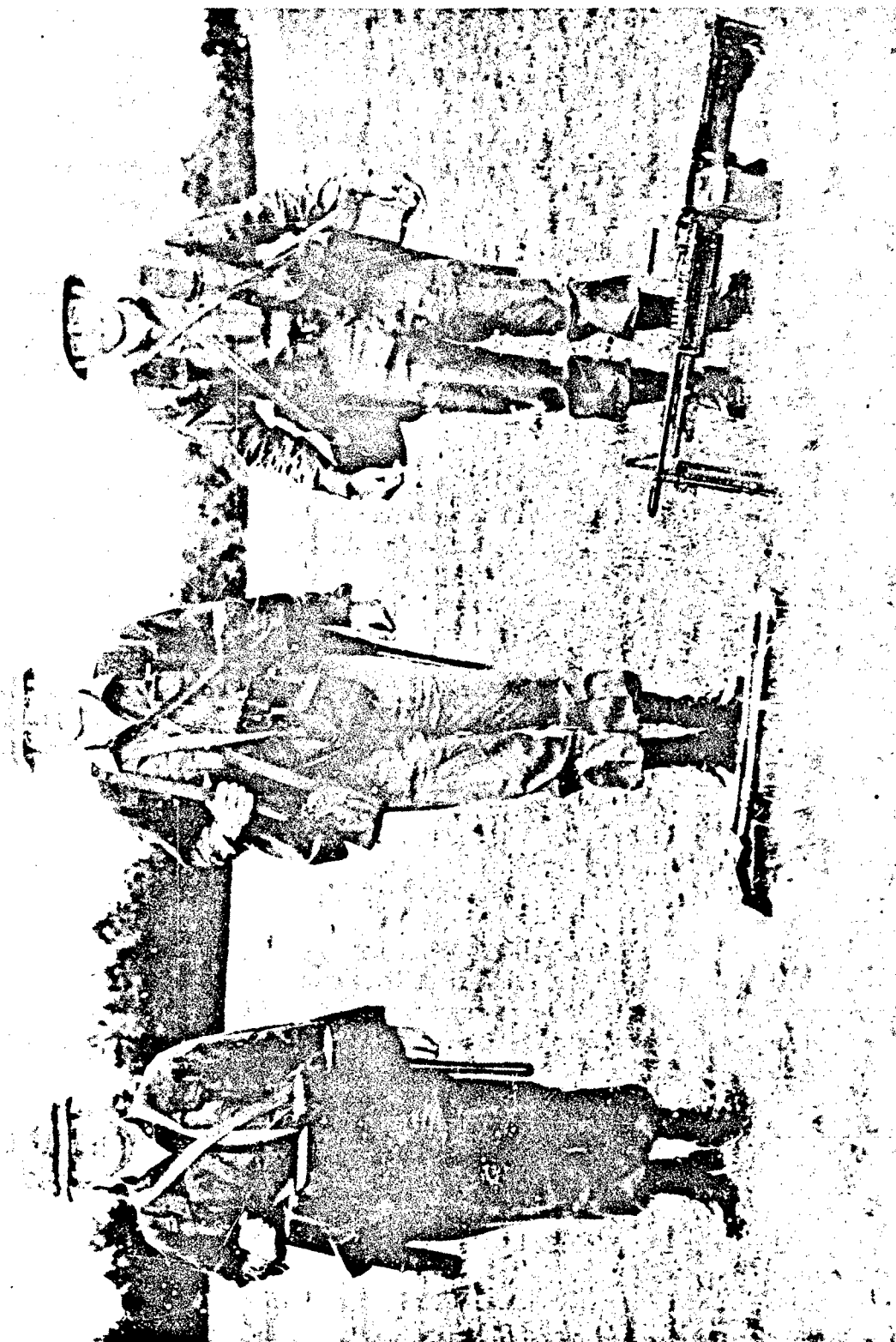


Figure 2.

moves through hostile territory. Such units drilled in counter ambush techniques and properly armed with TOE weapons have provided very adequate security for movement on non-tactical convoys. In a theater where unit movements are many times restricted by lack of security forces, non-infantry units should be used to provide their own security for such moves."

b. "The engineer force moved to the construction site and commenced work. During the operation to this point several probing attacks and sniper fire on the beach and the road had been encountered but repulsed with only one casualty. The speed and efficiency of the operation coupled with tight security measures had not given the VC time nor opportunity to react."

c. "Viet Cong activity on the route began to increase during this period: by passes and bridge abutments were repeatedly blown; mining and sniper harassment further complicated matters for the engineers charged with repairing the damage."

d. "A VC patrol was repulsed leaving a dead VC possessing an operations order indicating that a large-scale attack on the bridge site was scheduled for the next night. Destruction of the bridge would have caused a serious setback in plans for upgrading the route."

e. "In the early morning hours a bivouac area was attacked by the 82mm mortars of an estimated battalion sized force. With the aid of air and artillery support, the attack was beaten off inflicting considerable casualties on the VC."

#### USCONARC Comments

These extracts from engineer units' operational reports are cited to illustrate the need for engineer and other combat support and service support units, to be prepared for combat operations as well as for normal type missions. This dual requirement must be emphasized throughout all phases of training.

#### References.

Chapter 1, paragraph 1-6, FM 5-1, "Engineer Troop Organizations and Operations."

Paragraph 7, appendix V, CON Pam 350-30-1, "Operations - Lessons Learned."

Paragraph 25, appendix I, DA Pam 350-15-1, "Operations - Lessons Learned."

Paragraphs 1 and 6k, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."

Paragraphs 15 and 29, appendix, DA Pam 350-15-4, "Operations - Lessons Learned."

## Section II

### Joint Operations and Procedures for Airmobile Operations

#### 7. Incident/Observation.

"Troops are often extremely slow to leave the aircraft upon touchdown in the landing zone during a combat assault. This can be extremely dangerous in that the spacing between helicopters is normally kept to a minimum in order to get the maximum number of troops on the ground in the shortest possible time, and to lessen exposure time at a very critical stage. If any delays are caused on the landing zone, the following aircraft must slow down, break formation or stop."

#### Lesson Learned

"Prior to the operation, ground commanders must brief their troops to leave the aircraft promptly upon signal from the crew. The crews should give the troops "get ready" and "get off" signals upon landing in the landing zones."

#### USCONARC Comment

Similar reports have been received indicating that troops are slow to embark on helicopters at pick up zones. The drills require emphasis in airmobile training and sufficient practice before missions to insure rapid loading and unloading.

#### References.

Paragraph 12b(5), chapter 3, FM 1-100, "Army Aviation Utilization."

Paragraph 47f(5), section VI, chapter 3 and sections II and III, chapter 5, FM 57-35, "Airmobile Operations."

#### 8. Incident/Observation.

"During extraction operations the use of the Claymore mine has been found to be extremely effective. The mines should be placed

around the pickup site and command detonated when the last element moves to board the helicopter."

#### Lesson Learned

"By employing Claymore mines in this manner the possibility of the enemy engaging the rear elements prior to and during extraction is greatly reduced."

#### Reference.

Paragraph 8, appendix IV, CON Pam 350-30-1, "Operations - Lessons Learned."

#### 9. Incident/Observation.

"This unit has encountered six incidents of mines and booby traps in the landing zones during the last month. The devices used have varied; some were pressure mines and others were command detonated. The explosives are usually attached to trees or buried in small mounds or rice paddy dikes. The enemy normally fires the command detonated mine on touchdown of the aircraft in order to wound not only crew members but also the passengers."

#### Lesson Learned

"Special care must be directed to the preparation of the landing zones and in the selection of the exact touchdown point; ground commanders must be advised of the possible employment of anti-helicopter devices. In areas where booby traps may be encountered, landing away from dikes and back from tree lines is advised."

#### References.

Appendix III, (Selection, Preparation, and Operation of Landing and Drop Zones), FM 57-35, "Airmobile Operations."

Paragraph 18, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."

Paragraph 17, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."



10. Incident/Observation.

"When artillery is used to fire preparation of landing zones there is the inherent problem of insuring when the last round has been fired. There must be no appreciable time lag between artillery preparatory fires and that of the gun ships and landing troop carriers."

Lesson Learned

"To insure the flight leader that the last round has been fired, prearranged smoke is used in the last volley. The color of smoke is varied and the color and frequency of its use throughout the preparation is varied to prevent any stereotype sequence."

USCONARC Comment

This method has proved effective, but it is not the only means of indicating that preparatory fires have been completed and it does not supplant fire support communication radio nets. Flexibility in coordinating fire support to meet varying circumstances is essential, but in all cases proper coordination and dissemination of fire support plans must be insured.

Reference.

Chapter 5, FM 6-20-1, "Field Artillery Tactics."

11. Incident/Observation.

"The language barrier, difference in training, background, employment of forces, knowledge of airmobile operations, and incompatible communication systems make it imperative that adequate liaison be established at various command levels of the supported unit. Many problems have been averted by having liaison personnel at the proper place. In instances where liaison people have not been located at key areas, problems have developed that have confused or delayed the operation."

Lessons Learned

"Major problem areas are averted when liaison personnel are located at the following places during an airmobile operation:

- a. Liaison must be maintained at division level for all operations, normally located in the division's tactical operations center.

b. Liaison must be maintained at the tactical command post of the airmobile task force commander if other than a division size operation.

c. Liaison must be maintained at the fire direction center or fire support coordination center.

d. The pick up zone control officer must act as liaison officer in the PZ. "

#### References.

Paragraph 11, chapter 2, FM 57-35, "Airmobile Operations."

Paragraph 25, chapter 9, FM 101-5, "Staff Officers' Field Manual: Staff Organization and Procedure."

#### 12. Incident/Observation.

"Dust conditions in field locations have usually not caused any difficulty due to the presence of a small amount of vegetation and the short duration of operation in the areas. Dust conditions in aircraft parking and staging areas have become a real problem and must be considered each time a helicopter operation is planned. The use of periprime in these areas has greatly reduced the dust hazard. "

#### Lesson Learned

"Extra time must be allowed for helicopter operations in dusty areas when planning for a lift. Periprime greatly reduces dust and should be applied to helicopter parking, staging, and resupply areas."

#### References.

Appendix III, (Selection, Preparation, and Operation of Landing and Drop Zones), FM 57-35, "Airmobile Operations."

Paragraph 18, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."

Paragraph 17, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

#### 13. Incident/Observation.

"The requirement for hasty means of clearing landing zones can become critical in mountainous jungle. Landing zones in elephant grass or bamboo can be cleared by the following system, which requires

personnel on the ground to place and fire bangalore torpedoes. It saves a great deal of time and labor and does not require a great safety distance when firing the bangalores.

a. The bangalore torpedo sections are removed from the wooden box and a connecting sleeve is attached to one end of each section. The required number of bangalores is computed by figuring that each bangalore clears a lane 20 feet wide in elephant grass and a maximum of 15 feet wide in bamboo. These are slung under a helicopter.

b. A single row of bangalore sections is assembled full length down the center of the intended LZ and fired from one end. This will clear a lane from which to place other bangalore sections.

c. Working from the cleared path, parallel sections of bangalores are assembled and thrust outward to the desired width of the LZ. These bangalores are placed on 15 or 20 foot centers depending on the vegetation to be cut. A ring main of detonating cord is run around the cleared path and the inside ends of the bangalores are primed. Firing these bangalores will cut bamboo and elephant grass in the LZ. Necessary hand cutting is done to remove stubs and to clear approaches."

#### USCONARC Comment

The method described is one of several reported from Vietnam. It has proved successful in suitable terrain and has the advantages of speed and reduced labor requirement.

#### 14. Incident/Observation.

a. "On several occasions, artillery fire has been observed that endangered airmobile forces. Those fires were conducted without coordination with the airmobile force commander. This failure to coordinate could have caused the loss of lives and equipment."

b. "On several occasions when this unit has controlled operations utilizing lift helicopter companies not organic to the unit, the late attachment of these companies has permitted only a fragmentary briefing prior to execution of the mission."

c. "Low level navigation over rice paddy and jungle terrain is difficult because of the failure of flight leaders to properly identify a landing zone, a go-around has to be made which places the formation in an extremely vulnerable position and loses the element

of surprise. Direction from the command and control aircraft, when available, will permit a flight to navigate to the landing zone successfully. A second method is for the flight commander to climb to 100-200 feet absolute altitude on approach to identify the landing zone."

#### Lessons Learned

a. "In airmobile operations, all artillery fires should be coordinated with the airmobile force commander, who should also be notified prior to the delivery of non-scheduled fires."

b. "Aviation command relationship should be established early enough to facilitate coordination and tactical execution."

c. "To assure landings on selected landing zones during low level approaches, helicopter flights should either be directed by command and control aircraft or the flight commander should ascend to an absolute altitude of 200 feet just prior to arrival in the landing zone."

#### References.

Paragraph 19, appendix, DA Pam 350-15-4, "Operations - Lessons Learned."

Paragraph 12, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

Paragraph 107h, chapter 6, FM 6-20-2, "Field Artillery Techniques."

Paragraph 10, chapter 3, FM 1-100, "Army Aviation Utilization."

Paragraph 51, section VIII, chapter 3, FM 57-35, "Airmobile Operations."

TC 1-27, "Low-Level Navigation."

Paragraph 21, section II, chapter 4, FM 1-100, "Army Aviation Utilization."

#### 15. Incident/Observation.

"Air Warning Data for Artillery and Mortar fire is announced on a specified frequency, which all pilots are required to monitor. However, during a recent operation, some pilots failed to monitor the air warning net. Because of this many check fire orders were announced (stop artillery) to preclude hitting helicopters by indirect fire weapons."

### Lesson Learned

"All pilots should monitor the air warning net to allow both heli-borne operations and fire support to operate concurrently."

### References.

Paragraph 23, FM 57-35, "Airmobile Operations."

Paragraph 12, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

### 16. Incident/Observation.

"Transporting sling loads at night with CH-47A aircraft when there is no visual horizon, may create hazardous conditions. Load oscillations cannot be readily detected nor can timely corrective control response be applied to counter load oscillations, a condition which could cause the pilot to lose control of the aircraft or be forced to release the load to preclude losing control."

### Lesson Learned

"Operating with sling loads at night requires a high state of individual pilot training. When no visible horizon exists the risk of losing the helicopter or the sling load must be carefully weighed against the tactical necessity for the mission."

### References.

Paragraph 12b, chapter 3 (Fundamentals of Employment), FM 1-100, "Army Aviation."

Paragraph 16c, chapter 2, FM 57-35, "Airmobile Operations."

### 17. Incident/Observation.

"The area was completely inundated by flood waters to a depth of 10 feet in most places. VC local forces were forced to load arms and equipment from hiding places into sampans in order to wait out the flood. To exploit this condition, a combined force of helicopters, patrol boats and a small tactical ground force was organized. Armed helicopters were used to reconnoiter in front and to the flanks of the advancing patrol boats to force suspected VC sampans out into the open. A transport helicopter hovered over suspected sampans while soldiers aboard utilized a long pole hook to strip decking and camouflage from the sampan. In instances where suspected VC were

in or around the sampan, a rope ladder was dropped and the suspects directed to climb up into the transport. Whenever possible, each suspected VC sampan was investigated by one of the waterborne maneuver elements. If it was impossible to get a surface element to the location of the sampans, they were then destroyed by armed ships. Some VC attempted to hide in the water in the vicinity of their sampans, breathing either through hollow reeds or hiding in the grass with only their noses above water. As the transport hovered over the area, the rotor blast would blow the high grass down and expose the heads or faces of the suspects. In some instances it became necessary to throw concussion grenades or fire M79 rounds into the water to force the VC to the surface. This combined heliborne, waterborne force proved to be highly successful in flooded areas against VC forces that use sampans as arms and equipment caches."

#### USCONARC Comments

New equipment and techniques should be exploited fully to surprise, outmaneuver and defeat the enemy. This report is quoted as an example of the success achieved by using new methods to the best advantage in suitable terrain and circumstances. The same report included certain recommendations for the employment of the type of force described:

a. "If used to move attacking troops, it is preferable that the assault element be debarked and deployed before approaching close to known enemy position. A more thorough search of the area is assured, and in the event of contact, friendly fire and maneuver will be faster and more effective."

b. "While boats make it much easier to move crew-served weapons and equipment of assault units through areas containing heavy aquatic grasses, commanders must avoid carrying more in the boats than can be manpacked when operations continue on foot. Transforming combat boats into logistical or administrative vehicles, especially on open waterways, must be avoided."

c. "When a large boat force moves, it adopts a march formation. Advance, flank, and rear guards are deployed in adjacent waterways or off established waterways to the extent permitted by terrain. These security elements should be supplemented by foot elements as needed."

#### Reference.

Section III, chapter 9, FM 31-16, "Counter guerrilla Operations."

### Section III

#### Enemy Tactics

##### 18. Incident/Observation.

"While this unit was deployed in defensive positions in a beach area, it became common practice for the local villagers to sell fruits and beverages in and around the first perimeter. One of the younger men was observed drawing the location and implacement of vehicles, CP and crew-served weapons. Upon detention and interrogation, he was found to be a VC sympathizer. A second perimeter defense was established farther out, and this intercepted a four man reconnaissance team that night. One of the VC killed was carrying a complete schematic of the CP, the defense perimeters, and crew-served weapons positions. Prior to a major attack on the position, the local villagers and fishing boats were discovered to have left the area."

##### Lesson Learned

"Keep local inhabitants away from the perimeter, and observe their movements around the local area. Establish listening and observation posts far enough out to intercept probing and reconnaissance patrols. Never use crew-served weapons on light sniper fire, as the VC use this tactic to pinpoint weapon locations. Reposition the CP and crew-served weapons nightly and use the CP only for the conduct of operations, never as sleeping quarters."

##### References.

Paragraph 1, appendix VII, CON Pam 350-30-1, "Operations - Lessons Learned."

Paragraph 28, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

Paragraph 16, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."

Appendix II, DA Pam 350-15-1, "Operations - Lessons Learned."

Section V, chapter 9, FM 31-16, "Counter guerrilla Operations."

Paragraph 3, page 21, CON Pam 350-30-2, "Operations - Lessons Learned."

Subparagraph d, page 10, DA Pam 350-15-2, "Operations - Lessons Learned."

19. Incident/Observation.

"Most NVA contacts are in proximity to trails. Close scrutiny may reveal vines, bamboo or wire used by the enemy to guide his movement at night. Usually there is one main trail with numerous branch trails."

Lesson Learned

"The indicators described can give useful information about the enemy."

Reference.

Paragraph 11, appendix, CON Pam 350-30-4, "Operations - Lessons Learned."

20. Incident/Observation.

"Prisoner of war interrogation reports indicated that small enemy reconnaissance units had the mission of following US units and fixing locations of bivouac areas. Locating a US unit, the enemy reconnaissance element withdrew, laying communications wire back to the enemy base camp. Normally, the wire was laid forty to seventy meters from the US perimeter to a like distance from the enemy base camp, the distance depending on prevailing conditions of observation and concealment. This technique reduced the possibility of US forces discovering the wire and following it to the enemy area. If an attack was to be launched, the attacking force was guided by the wire to the objective area. The wire was retrieved during the enemy withdrawal. If the enemy commander elected not to attack, the reconnaissance unit made every effort to recover the wire to avoid compromise of their base. Communications wire was only one of several means used to accomplish the same purpose. One captive related that his unit used twigs from a rotten "Bam" tree. These twigs were reputed to emit a dull, detectable glow at night, thereby providing a guide."

Lesson Learned

"As a possible countermeasure, units returning to their base or bivouac should discreetly detach an element to slip off the trail and deal with enemy reconnaissance units following behind. This could be accomplished a few hours before a unit closes into its bivouac area. If properly executed, the following possibilities exist: ambush of enemy reconnaissance unit, disruption of possible enemy attack, capture of prisoners and discovery of enemy location."



Reference.

Second paragraph, page 19, and subparagraph n, page 20, DA Pam 350-15-2, "Operations - Lessons Learned."

21. Incident/Observation.

"Enemy forces normally conduct a thorough reconnaissance of US positions prior to an attack. As opposed to our reliance on sophisticated surveillance methods, the enemy relies almost exclusively upon ground reconnaissance elements and trail watchers."

Lesson Learned

"To counter enemy surveillance, units moving into an area to prepare for bivouac divide into two elements: a 'real' element and a 'deception' element. The 'deception' element prepares a base area with all the normal noise, while the 'real' element moves away quietly 200 to 300 meters to prepare a bivouac site. At dark, the 'deception' element stealthily moves to the real site. This deception plan can result in an enemy mortar or ground attack against an unoccupied position. In such a circumstance, the enemy would be highly vulnerable to counterattack."

USCONARC Comment

The aim must be to defeat the enemy in guile and deception, making proper preparations to take advantage of resulting miscalculations. It is important also to avoid establishing a set pattern of countermeasures, which the enemy will recognize and counter.

Reference.

Paragraph 17, appendix I, DA Pam 350-15-1, "Operations - Lessons Learned."

22. Incident/Observation.

"During a coordinated attack, the NVA maneuvered against a sector of the perimeter, pinning down the forces within by intense rocket and mortar fire. Enemy riflemen attempting to penetrate the perimeter are believed to have fired only one quarter of their individual basic load of small arms ammunition. It is also believed that the volume of supporting automatic weapons fire was not representative of the ammunition available for the assault. It is thought that the enemy was attempting to penetrate the perimeter before expending

the majority of small arms ammunition, thus enhancing his capability to withstand a counterattack or exploit success."

### Lesson Learned

"This tactic points up the critical requirement to determine the location of the enemy's main attack. Once determined, all available fire support must be applied, without delay, to spoil the attack. A reaction force supported by automatic weapons must be positioned to react to any threatened sector."

### References.

Paragraph 15, appendix, CON Pam 350-30-4, "Operations - Lessons Learned."

Paragraph 19, appendix, DA Pam 350-15-4, "Operations - Lessons Learned."

### 23. Incident/Observation.

"Comparison of this operation with previous operations led to several conclusions regarding enemy locations:

a. The enemy continues to live in draws and heavily vegetated terrain that are usually near a high speed trail with many smaller trails nearby.

b. His living areas have easy access to water, but the presence of water is not always indicated on the map. The larger living areas usually have smaller camp sites on the routes of approach.

c. After initial contact, the enemy generally disperses and avoids the living areas during daylight hours.

d. It has been noted the enemy quite often digs in on the military crest of the hill with a high speed escape route close by. The escape route does not run to the rear of his position, but invariably to the flanks.

e. Enemy positions were generally oriented toward the mouths of the valleys and invariably along normal flow lines, i. e., trails, ravines and streambeds."

### USCONARC Comment

The type of enemy locations described were encountered in an area of operations, which included dense jungle, rugged mountains, rolling hills, and swift mountain streams and rivers. While not necessarily applying to other types of terrain, the description indicates the features considered by the enemy in selecting areas in jungle covered mountains.

#### References.

Paragraph 17, appendix I, CON Pam 350-30-2, "Operations - Lessons Learned."

Paragraph 8, appendix, CON Pam 350-30-4, "Operations - Lessons Learned."

#### 24. Incident/Observation.

"The unit experienced considerable difficulty in detecting mines emplaced by the VC. The mines used were about 20 pounds in weight, wrapped in cloth and bamboo strips and contained metal only in a flashlight battery and firing cap. The route mined had a soil base with high metallic content and miscellaneous metal objects, which caused a constant background sound in the mine detector headset. After several vehicles had been destroyed tests were run to determine whether detectors were working properly. It was discovered that the VC had buried the mines 8 inches below the surface and that unit detectors would not detect them. Also at this depth earth bridged over the firing device, until broken by repeated vehicle passes over the mine, when the mine exploded."

#### Lesson Learned

"The VC will employ every possible method to defeat detection and clearance of their mines. It cannot be assumed that a road is clear simply because it has been swept and traffic has been travelling upon the road."

### USCONARC Comment

The VC practice of laying fresh mines in a route after it has been swept has also been reported.

#### Reference.

Paragraph 17, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

## Section IV

### Basic Tactics - Friendly Forces

#### 25. Incident/Observation.

"When too many troops become involved in the evacuation of their WIA and KIA, tactical momentum can be lost. Casualties have been incurred as a result of soldiers attempting to aid their companions, only to become casualties themselves."

#### Lesson Learned

"The appropriate action is to continue attacking the enemy, driving him off, and clearing the field for casualty evacuation. Troops only slightly wounded should be required to continue to perform their duties until the action is concluded and their services can be spared. The walking wounded should be used when possible to assist the seriously wounded until aidmen are available."

#### Reference.

Paragraph 6m, and 15g, appendix I, DA Pam 350-15-2,  
"Operations - Lessons Learned."

#### 26. Incident/Observation.

"Booby traps have inflicted multiple casualties in cases where troops were bunched up."

#### Lesson Learned

"The soldier must become an expert in detecting booby traps and must be impressed with the fact that proper interval must be maintained in combat formations."

#### USCONARC Comment

"Bunching up" may also cause increased casualties from fires of artillery and automatic weapons. During training and on combat missions intervals must be maintained; the actual distances between subunits and soldiers must be related to the terrain.

## References.

Paragraphs 139c(9) and 147, chapter 14, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Appendix II, FM 7-15, "Rifle Platoon and Squads Infantry, Airborne and Mechanized."

Paragraph 4b, appendix II, DA Pam 350-15-1, "Operations - Lessons Learned."

### 27. Incident/Observation.

"The employment of snipers particularly in ambush sites having rubber or similar height trees can inflict heavy casualties on the ambushed element. Snipers are very effective because the ambushed force normally is concentrating its attention on the forces on the ground."

#### Lesson Learned

"Plans for fire distribution should include the engagement of possible sniper locations once contact has been made."

## References.

Paragraph 24, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

Paragraph 37, FM 31-30, "Jungle Training and Operations."

Paragraph 16, appendix, CON Pam 350-30-4, "Operations - Lessons Learned."

Paragraph 4b, appendix II, DA Pam 350-15-1, "Operations - Lessons Learned."

### 28. Incident/Observation.

"Though the VC destroyed several vehicles the convoy was not overrun, despite the fact that the major portion of the enemy force only had to contend with the small arms of the escorted personnel and two Armored Cavalry Assault Vehicles (ACAV) since:

a. The counter fire from the ambushed column began as soon as the trucks stopped.

b. The escort unit was warned of the ambush and entered the killing zone firing automatic weapons. This undoubtedly inflicted casualties on the enemy and may well have caused the VC to initiate the ambush prematurely.

c. The tremendous volume of fire put out by the ACAV was instrumental in causing the VC to break contact and flee."

#### USCONARC Comment

Quick and aggressive reaction to ambush coupled with utilization of maximum available firepower can be instrumental in defeating enemy ambush forces.

#### References.

Paragraph 37, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 42, FM 31-30, "Jungle Training and Operations."

Paragraph 12 and 13, appendix, CON Pam 350-30-4, "Operations - Lessons Learned."

Paragraph 25, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

#### 29. Incident/Observation.

"The VC are believed to be expert trackers and are able to follow units moving on either flank, in front of or by trailing from the rear. Patrols should be especially alert for trackers."

#### Lesson Learned

"Constant doubling back on trails and setting up hasty ambushes for short periods is one counter measure. Using the off set method going to an objective may sometimes elude trackers. When selecting a site for the night, the site should be bypassed and circled for at least several hundred meters, moving into position only at last light."

#### Reference.

Paragraph 17, appendix III, CON Pam 350-30-3, "Operations - Lessons Learned."

#### 30. Incident/Observation.

"On ambushes there is a tendency to detonate Claymore mines prematurely before the enemy main force has entered the killing zone."

### Lesson Learned

"Troops must be willing to allow the VC point man to pass their position so maximum casualties can be inflicted on the main body by Claymore mines."

### References.

Paragraphs 4b and 4d, appendix II, DA Pam 350-15-1, "Operations - Lessons Learned."

Paragraph 2b, appendix V, CON Pam 350-30-1, "Operations - Lessons Learned."

Paragraph 41, section II, chapter 3, FM 31-30, "Jungle Training and Operations."

Paragraph 176-183, chapter 16, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraphs 38 and 39, chapter 4, FM 21-50, "Ranger Training and Ranger Operations."

### 31. Incident/Observation.

"During company sized or smaller unit operations, supplying units by air has disclosed the friendly position to the enemy. This has enabled the enemy to probe the unit's perimeter during the night and establish ambushes to trap the unit when it moves out in the morning. Companies and smaller units have the capability of operating for 2 days and nights without resupply, by careful planning of rations to be carried and using indigenous water sources."

### Lesson Learned

"Company sized and smaller units should plan operations of short duration without resupply. If longer operations are planned, resupply should be accomplished every third day about midday allowing the unit to distribute supplies, continue operations in the afternoon, and clandestinely move into their night position."

### USCONARC Comment

A number of reports have indicated that units should dispense with resupply unless essential. Others have pointed to the need to avoid overloading individual soldiers on patrol and combat missions. A balance must be achieved between overloading soldiers and reducing resupply by air to the minimum to avoid disclosing positions and losing surprise.

### References.

Appendix III, FM 31-30, "Jungle Training and Operations."

Paragraph 57, chapter 4, FM 21-50, "Ranger Training and Ranger Operations."

Paragraph 24, appendix I, CON Pam 350-30-2, "Operations - Lessons Learned."

### 32. Incident/Observation.

"The employment of grenadiers:

a. While moving in dense jungle, the effectiveness of hand signals to direct squad fires is limited. A squad leader should keep an M79 grenadier nearby to assist in directing fire.

b. In fortified positions enemy targets can be pinpointed by using machine gun or automatic fires to draw fire, since the enemy tends to concentrate on automatic weapons. This gives the grenadier a chance to engage and knock out enemy weapons and personnel."

### Lesson Learned

"Controlled and directed fire of M79 grenade launchers maximizes their effect and should result in higher enemy casualties."

### References.

FM 23-31, "40mm Grenade Launcher, M79."

Paragraph 6, 33 and 85e(3), FM 7-15, "Rifle Platoon and Squads Infantry, Airborne and Mechanized."

### 33. Incident/Observation.

"During a recent NVA attack 75 percent of friendly WIA resulted from enemy mortar fire."

### Lesson Learned

"Extra effort should be made to secure overhead cover."

### References.

Paragraph 15d, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."



Paragraph 10, appendix I, DA Pam 350-15-1, "Operations - Lessons Learned."

Paragraph 85d(7), chapter 3, FM 7-15, "Rifle Platoon and Squads Infantry, Airborne and Mechanized."

34. Incident/Observation.

"In counterinsurgency operations great emphasis must be placed on minimizing the effect of military operations on the local populace and economy. Property rights, both public and private, must be respected and the prerogatives and functions of the local governmental agencies considered. Maximum effort must be made to request and obtain real estate easements, relocate graves and shrines, and provide compensation for damages and losses caused directly or, in some cases, indirectly through combat support operations."

Lesson Learned

"Close contact and coordination between military and civil authorities are required to insure operational support missions are prosecuted without unnecessary antagonism of the local populace and governmental agencies."

Reference.

Paragraph 33, chapter 4, FM 31-16, "Counter guerrilla Operations."

Section V

Knowledge and Current Use of Weapons and Equipment

35. Incident/Observation.

"Improper radio-telephone procedures and excessive chatter have detracted from the full effectiveness of communications nets."

Lesson Learned

"All personnel who control or use radio and telephone nets, must be cautious of such abuses. The use of accepted and doctrinal phraseology and terminology will expedite the transmittal of information and will provide more air-time for critical traffic."

### References.

Paragraph 28, appendix I, DA Pam 350-15-2, "Operations - Lessons Learned."

Paragraph 6, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

Paragraphs 100-102 and 130, FM 24-18, "Field Radio Techniques."

### 36. Incident/Observation.

"It is often necessary to park communications vehicles for prolonged periods at semi-fixed sites. Some set ups do not allow movement of a vehicle to exercise its mechanical components. Under these conditions, brakes and drive trains may be damaged by rust or lack of lubrication."

#### Lesson Learned

"When communications vehicles are parked for prolonged periods, all wheels should be set on blocks to permit free operation of the wheels and periodic exercise of the complete drive train."

#### USCONARC Comment

This lesson applies to all type vehicles, which must remain stationary for long periods and is particularly important in the climatic conditions of southeast Asia.

### References.

Paragraph 33, appendix I, CON Pam 350-30-3, "Operations - Lessons Learned."

Paragraph 9k, CON Reg 350-1, "USCONARC Training Directive."

### 37. Incident/Observation.

a. "High temperatures and continuous generator operations in Vietnam cause frequent overflow of electrolyte. This results in corrosion to battery box and damage to other parts of generators reached by the seepage of acids."

b. "Solutions to this problem lie in close supervision of operator maintenance and removal of batteries, which can be used with jumper cables to provide easy battery access and to permit the use of one set of batteries to start more than one generator."

c. "The specific gravity reading (SPGR) of electrolyte for operation in tropical climates should be between 1.200 and 1.225. Electrolyte provided for activating new dry charged batteries is 1.280 SPGR. Reduction of 1.280 SPGR to SPGR of between 1.200 and 1.225 is accomplished by diluting four parts electrolyte with one part water. This action should be of considerable help in prevention of overcharge of batteries in continuous operation."

#### USCONARC Comment

The maintenance and care of batteries require special attention in tropical climates.

#### Reference.

Paragraph 37b, TM 9-6140-200-15, "Operation and Organizational Field and Depot Maintenance - Storage Batteries Lead-acid Type."

#### 38. Incident/Observation.

"Artillery units operating in the Delta region or similar terrain have found it extremely difficult to obtain stable, all weather firing pads. Even the best select fill turns to "soup" under heavy use in wet weather, and rock fill is not available. Wooden mats have been constructed of 2 inch lumber in two layers, and on the larger pads, reinforced by a radial system of 10 or 12 inch "sleepers." These pads are octagonal and range from 20 feet in diameter for towed 105mm howitzers, to 30 x 60 feet oblong octagonal pads for self-propelled 175mm and 8 inch guns. The flexibility of a timber pad prevents shock damage to gun carriages. The pads are strong enough to withstand constant turning and movement of self-propelled guns. Recoil spades can be set in compacted material or a layer of crushed rock just off the pad and guns can be fired in any direction. The wooden mat distributes the load over a wide area and no significant sinking has been observed. Finally, the mats can be pre-cut by engineer units and assembled on-site by the artillery units."

#### Lesson Learned

"These pads have been tested by artillery units in combat operations and have been found highly effective."

#### Reference.

Paragraph 23, appendix, DA Pam 350-15-4, "Operations - Lessons Learned."

39. Incident/Observation.

"Demolition teams operating with the infantry soon discovered that 20 pounds of explosives was about the maximum amount an individual could carry and still maintain the pace. In addition, most bunkers and fortified houses destroyed were entirely demolished with two or three pounds of explosive. Since most of these structures were of mud and log construction, TNT proved most effective. Speed can be achieved by carrying prepackaged two or three pound charges with one or two five pound charges per team."

Lesson Learned

"Each man designated to carry demolitions should be outfitted with 20 pounds of TNT prepackaged into two and five pound charges."

Reference.

Paragraph 27, chapter 1, FM 5-25, "Engineer Combat Unit."

40. Incident/Observation.

"Sandbags are an effective means of protection against shrapnel and blast effect due to land mines and quite often can mean the difference between life and death. Also, the seats of 1/4 ton vehicles should be securely fastened."

Lesson Learned

"All troops carrying vehicles and the beds of heavy trucks utilized as troop carriers should be well sandbagged."

Reference.

Paragraph 6c(6), chapter 6, FM 20-32, "Landmine Warfare."

41. Incident/Observation.

"This armor unit has lost many tow hooks and cables by carrying them in the ready position. While in the ready position it has been found that there is a greatly increased probability of loss due to brush and trees; the amount of time saved has been marginal."

### Lesson Learned

"Tow hooks and cables should be carried in the stowed position to reduce loss."

## Section VI

### Inquisitiveness and Alertness

#### 42. Incident/Observation.

"Punjii stakes were found around an enemy defensive position. They were easily recognizable in the grass and the points were aiming away from the position."

### Lesson Learned

"Look for punjii sticks and read into them what their employment could mean for example the direction they are pointing is expected route of friendly force advance; the opposite direction might hide an enemy position."

### References.

Paragraphs 54 and 108c, FM 21-75, "Combat Training of the Individual Soldier and Patrolling."

Paragraph 2, appendix VII, CON Pam 350-30-1, "Operations - Lessons Learned."

Paragraphs 44 and 45, chapter 4, FM 30-7, "Combat Intelligence Battle Group, Combat Command and Smaller Units."

#### 43. Incident/Observation.

"An unfavorable trend has been noted in the amount of classified information being discussed at bars, in clubs and over non-secure communication circuits. The VC have many agents, some not by choice but due to pressure on relatives. These personnel understand English. The enemy also has the capability to monitor telephone and radio conversations."

### Lesson Learned

"The urgent need for the control of classified information is re-emphasized. Only personnel with a need to know should be placed on access rosters."

## USCONARC Comment

Careless talk costs lives. Every soldier must guard against the temptation to discuss military activities in public places.

### References.

Paragraphs 59, 146 and 148c, FM 31-16, "Counter guerrilla Operations."

Paragraph 26, appendix I, DA Pam 350-15-4, "Operations - Lessons Learned."

#### 44. Incident/Observation.

"Timely intelligence from as many sources as possible aids in the evaluation of enemy capabilities and intentions. Coordination should be effected with special forces units operating in the area of operations to utilize their intelligence network and intimate knowledge of the area."

#### Lesson Learned

"A great deal of timely and valuable information can be obtained from local special forces."

### Reference.

Paragraph 148, chapter 8, FM 31-16, "Counter guerrilla Operations."

#### 45. Incident/Observation.

"It has been found that the individual soldier has a keen interest in the overall intelligence picture in the unit's area of operations, but rarely through day to day operations knows little more than the situation in the area that his squad or platoon operated in for that day."

#### Lesson Learned

"At the minimum monthly intelligence briefing by the battalion S2 S2 or his representative should be given to the troops as a part of the command information program."

### USCONARC Comment

Unit and subunit commanders should also insure soldiers are kept in the picture, without prejudicing security. The dissemination of information must be conducted on a "need-to-know" basis, but unclassified background information can be given to soldiers to keep them aware of the situation.

#### Reference.

Paragraphs 93c and d, chapter 9, FM 22-100, "Military Leadership."

#### 46. Incident/Observation.

a. "A large number of agent reports contain unit designations not found in USARV or IIFORCEV holding."

b. "It has been found that most of the agent reports received do not agree with one another in reference to the names of units located in a single area."

c. "The value of agent reports lies not only in the names of the units or of the commanding officers, but also in the unit locations, as indications of enemy movement in and through an area."

### USCONARC Comment

All intelligence reports should be carefully analyzed, compared, and evaluated to obtain the best possible information on the enemy.

#### References.

Chapter 5, FM 30-7, "Combat Intelligence Battle Group, Combat Command, and Smaller Units."

Paragraph 148, chapter 8, FM 31-16, "Counter guerrilla Operations."

### Section VII

#### Logistics and Combat Service Support

#### 47. Incident/Observation.

"Roads which endure heavy convoy and haul traffic are in need of frequent repairs and continuous maintenance, especially during the monsoon season. Since repair work involves men and heavy

equipment spending relatively long periods of time along the same stretch of road, security becomes a problem in any area subject to VC infiltration. Road maintenance elements of this unit were generally not fired upon by snipers until they had been working on the same segment of road for a period of 3 or 4 hours. It is recommended that road maintenance be scheduled in such fashion that short stretches are repaired quickly, and the equipment and personnel move on to a new site within a few hours."

#### Lesson Learned

"Continuous linear road maintenance and predictable patterns of repair work should be avoided in the interest of security, wherever possible."

#### References.

Paragraph 133, chapter 7, FM 31-16, "Counter guerrilla Operations."

Paragraph 21, appendix I, CON Pam 350-30-2, "Operations - Lessons Learned."

#### 48. Incident/Observation.

"The current practice of placing shell casing or pipe into a gravel or can filled pit for a urinal is completely unsatisfactory. Such facilities collect insects and give off a continual offensive odor. Crushed cans are also unsatisfactory as urine collects within cans."

#### Lesson Learned

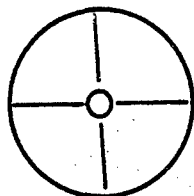
"The urinoil, a urinal designed to keep urine from coming into contact with air, should be utilized. It has no odor, is easily constructed from locally procured and salvage parts and precludes the influx of insects. It must be well set in gravel to insure good drainage." (Figure 3)

#### 49. Incident/Observation.

"Reports indicate that driver faults have caused excessive deadlining of trucks, cargo, 5-ton, M54 and M54A2. One problem is starter failure, caused by drivers engaging the starter too long. Another is injector pump failure due to impurities in fuel, caused by drivers failing to drain the fuel filter daily and change the filter element as required."



TOP BRACE  
PLACEMENT



BOTTOM BRACE  
PLACEMENT

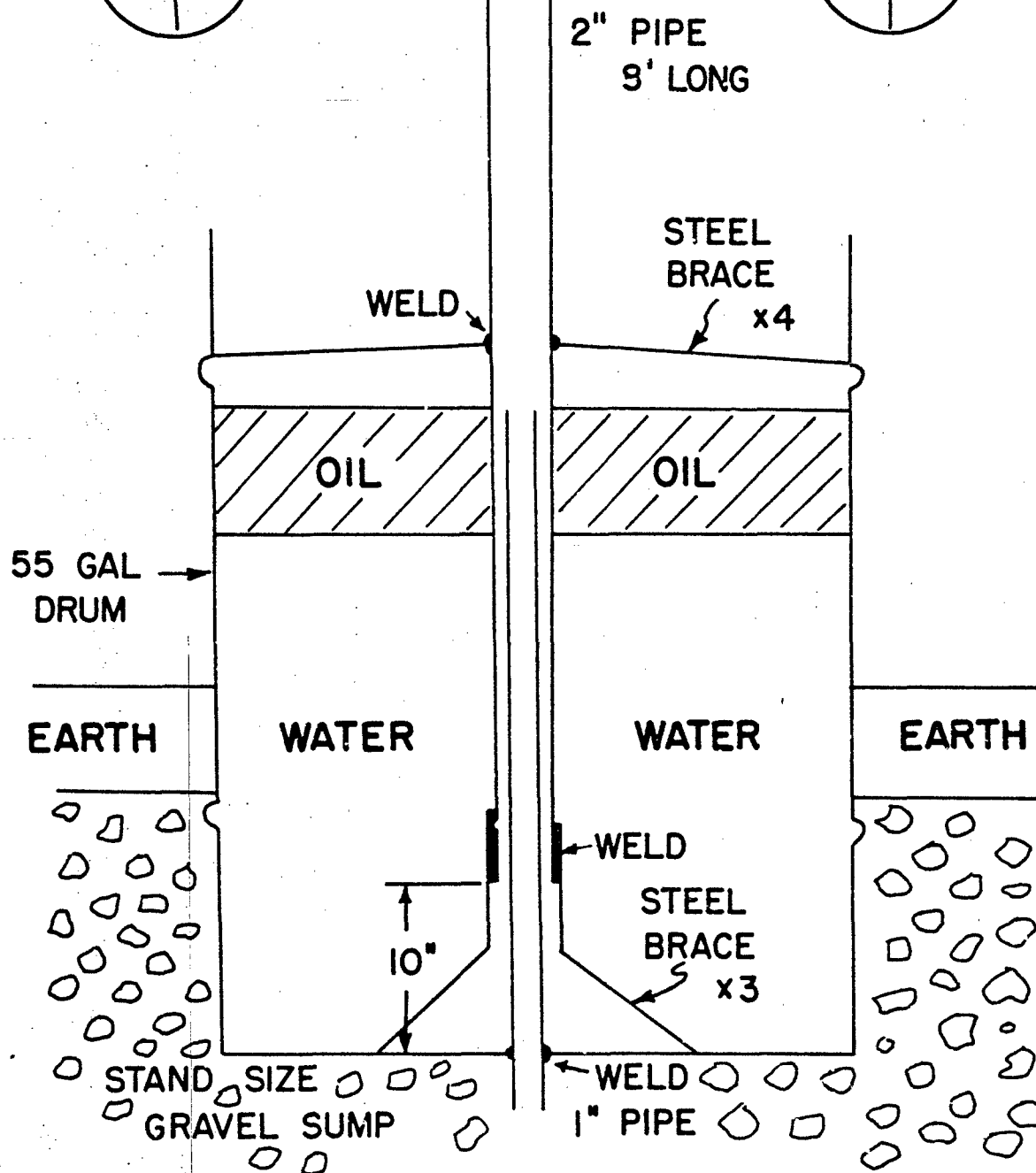
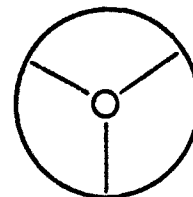


FIGURE 3. "URINOIL"

## USCONARC Comment

Personnel responsible for M54/M54A2 driver training should instruct drivers to release the starter switch immediately when the engine fires. Instructions and PM supervisors should also insure that drivers perform required PM on fuel filters as prescribed in equipment TM.

### Reference.

TM 9-2320-211-10, "Operator's Manual: Truck Chassis: 5 Ton, 6 x 6, M54, M54A2."

### 50. Incident/Observation.

"Field maintenance acceptance standards must be high. Recurring organizational deficiencies particularly, automotive and signal, required stringent action as follows:

a. Inspectors were fully briefed and given the prerogative to reject jobs due to lack of operator or organizational maintenance. Tools were provided at the inspection station if operators wished to make on the spot corrections.

b. New inspection standards were disseminated by liaison visits.

c. A requirement that up to date log books accompany applicable equipment is enforced."

### Lesson Learned

"High initial inspection standards increases the degree of organizational maintenance and decreases the down time in field maintenance facilities."

### References.

Section IV, AR 750-1, "Maintenance Concepts."

Paragraph 1, chapter 2, TM 38-750-1, "Maintenance Management: Field Command Procedures."

### 51. Incident/Observation.

"The unnecessary exposure of ammunition causes it to deteriorate in a tropical climate."

### Lesson Learned

"Ammunition must be protected from the weather until just before firing. Ammunition can be broken open, prepared and then returned to the fiber containers until used."

### References.

Paragraph 150e, chapter 7, FM 31-30, "Jungle Training and Operations."

## Appendix II

### Combat Tips

#### Combat Tips for Individual and Small Unit Training

1. "Too often a potentially effective ambush is prematurely disclosed by coughing, scratching, movement to relieve oneself and other restless activities."
2. "Frequently the VC have established ambushes behind friendly patrols after they left their patrol bases. When the patrol retraced their routes, they were caught in ambushes when patrol members were tired and security was lax."
3. "The 'lure and ambush' is a commonly used VC tactic. The basic principle is to draw the attention of friendly forces, and lure them into prepared ambushes. Many variations of this tactic have been noted."
4. "The VC have attacked an outpost or vulnerable unit and then attempted to ambush relief forces at nearby landing zones or along principal avenues of approach."
5. "A typical withdrawal technique used by small VC forces in danger of an unfavorable, close range contact is to drop their packs and run. Friendly forces have been inclined to slow their pursuit in order to inspect the packs."
6. "Typical signs of enemy presence are dead foliage which may be camouflage for a trap, tied down brush which may be a firing lane for a defensive or ambush position and villages which have been recently abandoned by women and children."
7. "Construct and occupy positions during daylight hours and abandon them during the hours of darkness to move to ambush sites or to attack suspected enemy positions."
8. "Move out from a position in the afternoon and after darkness falls, radically change direction of march to attack a preselected target before dawn."
9. "'Beat the bush' rather than move along main trails, where the enemy employs trail watchers. Search along secondary and tertiary trails which offer the guerrilla excellent concealment as well as escape routes."

10. "Too often we receive reports of enemy escaping at ranges of 400-500 meters. A well trained sniper should be able to kill or wound the enemy at that range. Platoons should habitually employ the sniper."

11. Command Communications.

a. "Don't accept defeat just because all the text books say that a certain condition is prohibitive to good radio propagation. Try every trick you know, even the ones you 'know' won't work. You may be in for a surprise."

b. "Don't rely on touch; follow the instructions on tuning charts when setting up transmitters."

c. "Pay particular attention to operator maintenance. Moisture, fungus and dust are big problems in a hot climate. A few minutes each day can save hours of down time."

d. "Don't tune to 'about' the right frequency. There are a lot of HF operators in country and not too many workable frequencies."

e. "On transmitters fitted with cooling fans, let the blower run about thirty minutes after switching off. This will prevent condensation."

12. "The use of enemy prepared positions, while saving time and labor, is basically dangerous because the enemy is completely familiar with the terrain."

13. "Poncho shelters reflect enough light to betray the positions and outline the defensive perimeter and can be seen from a great distance."

14. "Encampment in an area cleared of trees and vegetation by artillery fire and airstrikes is dangerous because US troops lack concealment while the enemy is given concealment by the trees that have been blown down on the perimeter."

15. "The construction of and use of dummy foxholes proved effective in deceiving the enemy as to the true location of a perimeter. On one occasion several grenades were thrown into the vicinity of dummy foxholes. Had it been the actual emplacement, casualties would undoubtedly have resulted."

16. "Camouflaging foxholes makes them extremely difficult for the enemy to find at night even though during daylight hours they may be recognizable."

17. "There is a need to improve quick fire marksmanship. In a number of instances friendly troops surprised the enemy and were able to shoot first, however, the results were negligible. Training conducted along these lines verified this need."

18. "When using white phosphorous or trip flares, consideration should be given to wind direction and to the possibility of fires. White phosphorous munitions proved very effective for locating positions in the jungle during daylight as well as at night."

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,  
General, United States Army,  
Chief of Staff

Official:

KENNETH G. WICKHAM,  
Major General, United States Army,  
The Adjutant General.

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\*ARNG: Same as USAR.

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PART TWO

ADDITIONAL LESSONS LEARNED

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(5/15/66) d.f.

AVC-DH (15 May 66)

1st Ind

SUBJECT: Operational Report on Lessons Learned for 3d Quarter  
FY 1966, (RCS CSOPD-28 (RI) )

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO US Forces 96307

11 JUN 1966

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

1. The Operational Report on Lessons Learned submitted by the 1st Aviation Brigade reflects thorough research and preparation. The value of the report is increased by the information shown in the inclosures.

2. Reference paragraph 1, Section II A: This headquarters understood that assets would have to be furnished from other units if the Aviation Brigade was to be activated during the 3d Quarter, FY 66. The decision was based on the initial availability of a minimum staffing and equipping for the brigade.

3. Reference paragraph 2, Section II A: The command and operational command structure between this headquarters, Headquarters MACV, and subordinate units, dictates the requirement for placing selected aviation units under operational control of other organizations.

4. Concur with paragraph 3, Section II A.

5. Reference Section II B:

a. This headquarters is presently staffing a letter in which recommendations are proposed to USAMC that further study and development be directed toward reducing the weight and improving the aerodynamic characteristics of all weapon mounts used in Vietnam.

b. The USARV Aviation Safety Division during this quarter started publication of a weekly aviation accident summary and a monthly aviation pamphlet. Both are designed to direct supervisory attention to the aircraft accident situation and present possible causes and cures. Command supervision continues to be the central theme of Aviation Safety conferences and meetings.

6. A copy of this indorsement is provided the Aviation Brigade.

FOR THE COMMANDER:

*James R. Perry*  
JAMES R. PERRY  
Major, AGC  
Asst Adjutant General

6 Incl  
nc

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GPDP-MH (15 May 66)

2d Ind (U)

SUBJECT: Operational Report of Lessons Learned for 3rd Quarter FY 1966  
(RCS CSGPO-28 (R1)) (U)

HEADQUARTERS, UNITED STATES ARMY, PACIFIC, APO San Francisco 96558 14 JUN 1966

TO: Assistant Chief of Staff for Force Development, Department of the Army,  
Washington D.C. 20310

1. The Operational Report on Lessons Learned of the U.S. Army Aviation Brigade (Provisional) for the period 14 February - 30 April 1966 is forwarded herewith.

2. The brigade's ORLL reflects thoughtful preparation, and its value is considerably enhanced by the attachment of supporting documents.

3. This headquarters concurs in principle with the basic ORLL and with the USARV 1st Indorsement.

FOR THE COMMANDER IN CHIEF:

*DG 2/10*

6 Incl  
nc

D. A. HARRISON  
Capt, AGC  
Asst AG

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CG USARV, Attn: AVC-DH

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CPOF-1E (15 May 66)

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(RCS C3CFO-28 (R1)) (U)

HEADQUARTERS, UNITED STATES ARMY, PACIFIC, APO San Francisco 96553 14 JUN 1966

TO: Assistant Chief of Staff for Force Development, Department of the Army,  
Washington D.C. 20310

1. The Operational Report on Lessons Learned of the U.S. Army Aviation Brigade (Provisional) for the period 14 February - 30 April 1966 is forwarded herewith.

2. The brigade's ORLL reflects thoughtful preparation, and its value is considerably enhanced by the attachment of supporting documents.

3. This headquarters concurs in principle with the basic ORLL and with the USARV 1st Indorsement.

FOR THE COMMANDER IN CHIEF:

6 Incl  
nc

D. A. HARRISON  
Capt, AGC  
Asst AG

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CG USARV, Attn: AVC-DH

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DEPARTMENT OF THE ARMY  
HEADQUARTERS, USA AVIATION BRIGADE (PROVISIONAL)  
APO US Forces 96307

AVBD-C

15 May 1966

SUBJECT: Operational Report of Lessons Learned for 3rd Quarter  
FY 1966 (RCS CSGPO-28 (R1) )

THRU: Commanding General  
U.S. Army Vietnam  
ATTN: AVC  
APO US Forces 96307

Commanding General  
United States Army Pacific  
ATTN: GPCP-MH  
APO US Forces 96558

TO: Department of the Army  
Assistant Chief of Staff for Force Development  
Washington D.C. 20310

Section I  
Significant Organizational Activities

A. Command.

1. The Brigade CP was established at 106 and 253 Cach Mang, Gia Dinh, Saigon Area on 14 February 1966. Brigadier General G.P. Seneff Jr. was designated Commanding General and was directed by Deputy Commanding General USAFV to commence organization of the Headquarters and Headquarters Company for execution of anticipated mission assignment.

2. On 22 February 1966, General Seneff briefed General Engler, Deputy Commanding General, USAFV on proposed organization, employment and functions of the Brigade. As the result of this briefing the following decisions were announced:

a. Commanding General, Aviation Brigade will also function as USAFV Aviation Officer.

b. The Brigade will exercise command less operational control over subordinate aviation groups. Operational control has been specifically withheld by COMUSMACV.

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c. Rating and indorsing for officer efficiency reports for group commanders will include supported Field Force Vietnam Headquarters and the Brigade Commanding General respectively.

d. The decision as to whether or not the 34th General Support Group (AMGS) would be assigned to the Brigade, would be deferred to a later date.

3. Headquarters and Headquarters US Army Aviation Brigade was activated provisionally on 1 March 1966, by GO 1313, Headquarters, USARV (see annex 1). The 12th and 17th Aviation Groups, with assigned and attached units were placed under command of the Brigade effective the same date. GO 1313 was amended by GO 1690 to exclude the mission of control from the Brigade mission (see annex 2).

4. Brigade Headquarters strength on 1 March 1966 was 7 officers and 15 enlisted men.

5. During the month of March the newly formed staff visited subordinate groups and battalions, began to prepare standardized aviation tactics and techniques doctrine for the Brigade, participated in force development planning and preparation of an aviation unit deployment schedule.

6. The Brigade received a letter of instructions from USARV (see annex 3), establishing responsibilities, command relationships, providing guidance and prescribing terms of reference applicable to operations and functions of the Brigade.

7. In March and again in April the Brigade held a one day commander's conference for group, battalion and separate company commanders. At these conferences the commanders discussed problems and received guidance and policy from the Commanding General of the Brigade (see annex 4&5). These conferences will be held regularly in the future on a monthly basis.

8. The Brigade assumed operational control of the 125th Air Traffic Control Company on 28 March 1966, in accordance with GO 1982, USARV (see annex 6).

9. On 31 April 1966 the Brigade Headquarters strength was 28 officers, 3 warrant officers and 61 enlisted men.

10. Distinguished visitors received and briefed during the reporting period included:

Major General John Norton  
Brigadier General Hal C Pattison  
Brigadier General John M Wright  
Brigadier General Frank O Miller  
Brigadier General Charles M Mount

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B. Personnel, Administration, Discipline, Law and Order.

1. Morale of the unit has been excellent.
2. One Special Court Martial tried and convicted one of the headquarters security guards for leaving his post without proper authority.

C. Intelligence.

1. The S-2 section received one officer and two NCO's between 1 March and 15 March 1966, and spent the period of time establishing the files and preparing the office to assume the duties of a functional S-2 section.
2. On 15 March 1966 the S-2 assumed responsibility for classified documents and processing security clearances for headquarters personnel.
3. During the period liaison was established with U.S. Army Intelligence Brigade (Prov), 1st MI Battalion (MEBARS), J-2 MACV, 525th MI Group, Capitol Military Region, G-2 USARV and CICV.
4. In March, at the request of COMUSMACV, a joint test was conducted by the Air Force and Army to determine if there is a more efficient means of controlling the O-1 assets in Vietnam to obtain intelligence information. Since this test involved Army aviation assets as well as Air Force assets and would affect the intelligence collection effort, it was closely monitored by the S-2. As a result of this test, the following decisions were made by COMUSMACV:
  - a. Each service will continue to control its own O-1 aircraft.
  - b. Pilots from either service will fly the other service's aircraft when required.
  - c. Each service will provide minor maintenance and servicing for the other service's aircraft when required.
  - d. Pilots of each service will be trained to perform the other services missions to include Army O-1 pilots marking targets for air strikes by Air Force tactical aircraft.

D. Operations, Plans and Training.

1. The S-3 Section was formed on 1 March 1966, with the assignment of one officer and one NCO and initially was involved in establishing a file system and preparing the office to become functional as other personnel were received.
2. By 31 April the section had assigned six officers, two NCO's, two clerks and had assumed normal S-3 staff functions.

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3. A draft Brigade Airmobile Operations Manual was prepared and distributed to Brigade units and their supported units for comment. This manual in its final form will provide standardized tactical doctrine, techniques and terminology among Brigade units and serve as a reference for both aviation and supported units in the planning and conduct of airmobile operations in Vietnam.

4. This Headquarters directed each aviation group to conduct a 30 day test with one of its aviation companies (AML) augmented to conform to the following organizational structures.

- a. 60 rated aviators
- b. 23 UH-1D helicopters with crew chiefs
- c. 8 UH-1B armed helicopters with crew chiefs
- d. No change in maintenance personnel and equipment.

The purpose of this test was to determine the feasibility of such an organization to accomplish the following objectives:

(1) To increase the lift capability of the company to more closely conform to US rifle company lift requirements.

(2) To maintain an 80% mission availability rate without increased authorization for maintenance personnel and equipment.

(3) To decrease the aviator to aircraft ratio from 2.16 to 1.9.

(4) To determine, with allocated resources, the optimum organizational structure for such a unit.

The test was successfully completed by both groups with the result that objectives a. through c. above were attained and are feasible. Objective d. above was also attained with the recommended structure to consist of three lift platoons of six mission ready aircraft each and an armed platoon of five mission ready aircraft. Final results, conclusions and recommendations were still being staffed at the close of the reporting period.

5. The S-3 plans officer was appointed as a member of an Aviation Brigade/USARV ad hoc committee to determine Army aviation requirements and a proposed stationing plan for aviation units in Vietnam. This plan was still being prepared at the close of the reporting period.

6. This headquarters by direction of Headquarters USARV, prepared and had approved a contingency plan for emergency evacuation of U.S. non-combatants.

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7. A study was conducted to determine the desirability and feasibility of forming a provisional aviation battalion from the separate aviation units in the Saigon area. This battalion would provide command control of these separate units and clarify administrative and logistical channels. This study established the desirability and feasibility. Implementation of the provisional organization was being staffed at Headquarters USARV for a final decision at the close of the reporting period.

8. A proposal was prepared and approved by USARV to reallocate UH-1B/UH-1D resources now in country and those programmed. The proposal was to assign all UH-1D troop carrier aircraft to units whose primary mission is troop lift and to substitute UH-1B aircraft in those units whose mission is not primarily troop lift.

#### E. Logistics.

1. The Brigade S-4 section's activities initially in this period were focused on securing equipment for the formation of the Brigade Headquarters and acquiring real estate for offices and billets.

2. On 1 April the section became operational and began resolving problems of Brigade units related to equipment shortages and aircraft maintenance and parts problems. Significant activities were as follows:

a. Conducted an initial logistical meeting with all group and battalion S-4 officers. During this meeting the major points for discussion were:

(1) Reequipping aviation companies (airmobile light and airmobile medium) with light weight equipment.

(2) Effectiveness of miniport refueling systems

(3) Logistical support procedures in the different corps areas with a view toward standardization.

(4) Impact of closing prestock points.

(5) Maintenance procedures and reports

(6) Problem areas.

b. Prepared and submitted requirements for non-standard light weight equipment for all airmobile operations.

c. Prepared and submitted plans for relocation of the Brigade Headquarters.

d. Initiated study concerning problems with the UH-1 and O-1 aircraft engines to determine why they are not reaching their expected engine life.

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e. Initiated action to secure data for preparation of armament subsystem ASL's and PLL's.

f. Initiated action to relieve a current shortage of fuel tanks for the OV-1 aircraft by obtaining them from the Air Force.

#### F. Information.

1. An information officer was assigned to the Aviation Brigade on 21 March 66. His initial action was to survey the information capability within the Brigade. Each of the two group headquarters had an officer assigned as an information officer as an additional duty. The seven battalions also had part-time information officers. One group had an enlisted man assigned to information duties; the other group and the battalions had no information personnel assigned or designated.

2. TCE for Aviation groups and battalions do not include spaces for information personnel. However, the battalions were advised to submit MTCB authorizing an information specialist (E-4) and a still photographer (E-4), and groups were urged to request authorization of an information officer (O-3) and a writer-photographer team. A TCE for the Brigade was submitted to Department of the Army, recommending an information officer (O-4), an information supervisor (E-7), a writer-photographer team and a clerk-typist (E-4) be authorized.

3. Although the Brigade Information Office had only limited operational capability, initial guidance was furnished to subordinate elements of the Brigade. In planning sessions with group information officers, the Brigade IO developed procedures for handling news releases. During April the first two issues of the periodic Brigade Information Bulletin were prepared and distributed. Addressed to commanders at all echelons and to their information officers, the bulletins discuss facets of the Brigade Information Program. The initial issue dealt with the public information program; the second covered command information and orientation.

4. Late in April the first Brigade Command Information Troop Topic, "Holidays and Ho Chi Minh", was published and distributed. Four general press releases and 40 hometown releases were prepared and distributed. In addition five releases originating in subordinate commands were completely rewritten and distributed, and seven other releases from 17th Group were edited and processed.

5. Throughout the period attempts were made to obtain qualified personnel for the Brigade Information Office. Due to the extreme shortage of information specialists in Vietnam the attempts were not successful. Consequently operational impetus rested with the groups and battalions, with the Brigade IO providing guidance and liaison between the Groups and higher headquarters.

#### G. Flight Standardization.

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On 23 March 1966, a flight standardization officer was assigned. He commenced initial planning to establish an Aviation Brigade standardization program and established liaison with the Army Aviation School to obtain necessary documents and advice to supplement the program. The last week in April a decision was made by USARV to establish the standardization program at that level. The Brigade Flight Standardization Officer was selected as a member of an ad hoc committee at USARV to draft the USARV program. The program was still under study at the close of the period.

#### H. Aviation Safety

1. The aviation safety section of the Brigade Headquarters was formed on 7 March 1966 with the assignment of two officers to the section. The remainder of the period was spent making staff visits to subordinate units in the field to determine problems related to aviation safety.

2. Close liaison was also established with USARV Aviation Safety office and 12th Aviation Group safety to insure that the Brigade safety section did transition into the functions formerly exercised by 12th Aviation Group.

3. Accident notification procedures were established and became functional on 1 April 1966. ✓

4. Major problems encountered in all units visited were related to shortages of air crew protective equipment. The following items are in critical short supply.

- (a) Protective body armor.
- (b) Flying gloves.
- (c) Sun Glasses.
- (d) Flight Helmets (some sizes).

5. There is also a large demand for a small adequate personal survival kit that could be carried on the individual crewman on all flights.

6. Action has been initiated to obtain the protective equipment but a target date for arrival of these items in country is not firm. USABAR is taking action to obtain prototype sets of personal survival kits manufactured by Aero-Jet Corporation in sufficient quantities to run a feasibility study in country this summer.

#### I. Signal.

1. The signal section of the Aviation Brigade began operations on 1 April 1966 with the assignment of one officer and one EM. A second officer was assigned on 2 April and the third officer arrived 12 April. A communication NCO was assigned on 20 April and fourteen additional EM arrived during the period 20-30 April bringing the section up to full strength

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except for switchboard operators.

2. The primary effort during the period 1-30 April was directed toward organization of equipment and personnel. Circuits and frequencies were requested for use with the two aviation groups.

3. The draft TOE was also revised during the report period and recommended changes were submitted for equipment authorization. All items were placed on requisition with USARV Form 47 for equipment in excess of authorized allowances.

4. The following equipment was obtained during the period,

- (a) 3 ea AN/VRC-95 radio sets
- (b) 2 ea AN/VRC-46 radio sets
- (c) 1 ea AN/MSC-29 Teletype Terminal complete with generators and  $2\frac{1}{2}$  ton truck.
- (d) 2 ea HRT-2A Radio Beacons
- (e) 7 ea Tridea Radio Beacons
- (f) 2 ea 28V power supplies
- (g) 1 ea AN/PRC-25 radio set

All of the above equipment was acquired from various units within Vietnam on a hand receipt or a temporary loan basis, until equipment could be provided on a permanent basis through supply channels.

5. The following communications were established during the period:

- (a) Landline, sole user teletype circuit to 17th Aviation Group.
- (b) Landline, sole user teletype circuit to 12th Aviation Group.
- (c) Radio teletype/voice to both the 17th Group and the 12th Group.
- (d) Brigade Command Net, FM.

6. Action was initiated to develop a secure area for teletype operations so that security equipment could be obtained for handling classified

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message traffic. Subordinate Aviation Groups were also directed to develop secure teletype circuits to each Aviation Battalion. This project is in progress at this time.

7. The last 30 days of the reporting period saw the avionics system within the Brigade undergo several changes as the 34th Group (A22S) assumed the responsibility for general support maintenance and supply from the 1st Log Command. Dissemination of information to the avionic elements necessary to affect this changeover was initiated through liaison visits and publication of a Brigade Circular which will be distributed early May 1966.

#### J. Medical.

1. The Aviation Brigade Surgeon serves an additional duty as aviation medicine consultant to the USARV Surgeon. This dual function provides for liaison, on a continuing basis between these two headquarters and technical supervision of all in-country aeromedical activities to those units organic to divisions as well as those subordinate units of the aviation brigade.

2. The significant activities reported and problem areas encountered during the reporting period are listed as follows:

(a) Recurrent policy planning conferences with the surgeons of the 12th and 17th Aviation Groups for the development and continued supervision of a country-wide aviation medicine program.

(b) Staff visits to the 13th, 14th, 11th, 145th, 10th Aviation Battalions and their subordinate units to evaluate specific problems of aeromedical significance - fatigue, heat stress, medical reporting requirements and staff procedures.

(c) Reevaluation of the assignment and utilization of flight surgeons. At the present time all in-country flight surgeons are assigned on the basis of need and experience. The considerable number of malassignment problems which existed have been solved by movement of non-aviation medical personnel out of authorized TD slots and replacing them with flight surgeons.

(d) A persistent source of consternation has been the lack of guidance to unit level flight surgeons in the area of medical fitness requirements for flying personnel. A regulation is now being staffed which will provide standardization in this area. The lack of sufficient equipment and facilities still present a problem in providing complete medical coverage to aviation personnel.

(e) Evaluation and study for aviation medical coverage for I Corps area. The 134th Medical Detachment QA now under the 1st Log Command

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will be reassigned to the 17th Aviation Group for area aviation medical support in I Corps.

(f) Development of a complete, current list of all in-country aviation medical personnel with assignment and DEROS dates for planning and assignment purposes. The list has been forwarded to USARPAC and DA to assist personnel assignment planning.

(g) Development of a wound evaluation and analysis program to provide for the collection of specific data for the human engineering design of protective body armor. A regulation and a reporting form are being published.

(h) Establishment of a procedure for the reporting of specific areas of aeromedical significance within the command health report of the medical detachment in direct support of aviation units. (A "care of the flyer program")

(i) Programmed reorganization of all aviation medical support by establishing relatively permanent flight dispensaries at all major airfields under the battalion surgeons section with cellular units for built-in flexibility for operational coverage.

(j) Completed staff study and staff action on the reassignment of the 85th Med Det CM from the 765th GS Maint Battalion to the 22nd Aviation Battalion.

(k) Recommended items of personal equipment for aviation personnel-survival kits, survival vests with composite items of RT-10 radios, signal mirror, pen-lite flare guns, strobe signal light and other existing items within the Air Force inventory.

(l) Prepared monthly articles for the USARV aviation safety magazine.

(m) Continued surveillance of airmobile assault operations.

(n) Collected dust samples from helipad operational areas throughout Vietnam for submission to DA for analysis of health hazard resulting from dust exposure by rotary wing aviation personnel.

(o) Reviewed and evaluated all flight physical examinations and submitted them to higher headquarters. The clinical care and support of Brigade Headquarters personnel and aeromedical consultation to all subordinate units on request.

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(p) Continued liaison with all other medical commands in terms of in-country hospital facilities and their role and support of the aero-medical consultation chain.

(q) Guest lectures and panel discussions for Quarterly Aviation Safety Conferences.

(r) Served on warrant officer selection board.

## Section II

### A. Commander's Recommendations

1. Future organizations of this size should not be organized provisionally within available personnel and equipment assets. When provisional activation is required, the activation order should provide authority to requisition personnel and equipment against a proposed TCS or TD, or activation should not be accomplished until a TCS or TD has been approved.

2. Operational control of subordinate units should be included in command and operational commitments should be accomplished by direct support, general support or temporary attachment on a mission basis. Command less operational control is a particularly awkward means of exercising command for the commander and confusing to the subordinate commander in responding to the desires of more than one commander.

3. Staff officers selected for the Brigade headquarters should be selected from the field four to seven months after arrival in-country. This procedure serves two purposes: the headquarters benefits from the experience of the officer in the field; and the individual benefits by a change of jobs and environment during a particularly arduous tour in a combat zone.

### B. Lessons Learned

#### Mounts for Helicopter Door Guns

Item: Current door gun mounts are unsatisfactory.

Discussion: Current mounts for helicopter door guns are all mounted externally. As a result the aircraft capabilities suffer from loss of speed and efficiency, and engine life is decreased through constant application of additional power to attain required airspeeds.

Observation: All personnel, in helicopter units in the field, should be made aware of this shortcoming and encouraged to develop a mount which can be secured internally and from which the machine gun fired with only the barrel protruding from the aircraft. Troop exit and entry requirements must be considered in the placement and type of mount developed.

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Aircraft Accidents

Item: Aircraft accident rates in Vietnam are excessive.

Discussion: It is recognized that some accidents will occur so long as aircraft are flown, especially in combat where battle damage may result in subsequent accidents or diversion of the pilot's attention results from hostile action. Experience has shown however, that many of the accidents have occurred as a result of improper supervision and lack of command attention to sound, proven flying practices.

Observation: Aviation commanders at all levels must devote additional attention to actions of subordinates leading to unsafe or careless flying practices and consider recommending or convening flight evaluation boards for aviators who have repeatedly failed to exercise sound judgement. ✓

FOR THE COMMANDER:

*John B. Stockton*

6 Incl  
as

JOHN B. STOCKTON  
Colonel, Armor  
Deputy Commander

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AVC-DH (15 May 66)

1st Ind

SUBJECT: Operational Report of Lessons Learned for 3d Quarter  
FY 1966 (RCS CSGPO-28 (R1) )

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO US Forces 96307 1 JUN 1966

THRU: Commander in Chief, United States Army, Pacific, ATTN: GPOP-MH,  
APO US Forces 96558

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

1. The Operational Report on Lessons Learned submitted by the 1st Aviation Brigade reflects thorough research and preparation. The value of the report is increased by the information shown in the inclosures.
2. Reference paragraph 1, Section II A: This headquarters understood that assets would have to be furnished from other units if the Aviation Brigade was to be activated during the 3d Quarter, FY 66. The decision was based on the initial availability of a minimum staffing and equipping for the brigade.
3. Reference paragraph 2, Section II A: The command and operational command structure between this headquarters, Headquarters MACV, and subordinate units, dictates the requirement for placing selected aviation units under operational control of other organizations.
4. Concur with paragraph 3, Section II A.
5. Reference Section II B:
  - a. This headquarters is presently staffing a letter in which recommendations are proposed to USAMC that further study and development be directed toward reducing the weight and improving the aerodynamic characteristics of all weapon mounts used in Vietnam.
  - b. The USARV Aviation Safety Division during this quarter started publication of a weekly aviation accident summary and a monthly aviation pamphlet. Both are designed to direct supervisory attention to the aircraft accident situation and present possible causes and cures. Command supervision continues to be the central theme of Aviation Safety conferences and meetings.
6. A copy of this indorsement is provided the Aviation Brigade.

FOR THE COMMANDER:

6 Incl  
nc

*James R. Perry*  
JAMES R. PERRY  
Major, AGC  
Asst Adjutant General

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AVC-DH (15 May 66)

1st Ind

SUBJECT: Operational Report of Lessons Learned for 3d Quarter  
FY 1966 (MOS CSGPO-23 (R1) )

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO US Forces 96307

THRU: Commander in Chief, United States Army, Pacific, AFM: GPOF-181,  
APO US Forces 96558

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

1. The Operational Report on Lessons Learned submitted by the 1st Aviation Brigade reflects thorough research and preparation. The value of the report is increased by the information shown in the inclosures.
2. Reference paragraph 1, Section II A: This headquarters understood that assets would have to be furnished from other units if the Aviation Brigade was to be activated during the 3d Quarter, FY 66. The decision was based on the initial availability of a minimum staffing and equipping for the brigade.
3. Reference paragraph 2, Section II A: The command and operational command structure between this headquarters, Headquarters MACV, and subordinate units, dictates the requirement for placing selected aviation units under operational control of other organizations.
4. Concur with paragraph 3, Section II A.
5. Reference Section II B:
  - a. This headquarters is presently staffing a letter in which recommendations are proposed to USAMC that further study and development be directed toward reducing the weight and improving the aerodynamic characteristics of all weapon mounts used in Vietnam.
  - b. The USARV Aviation Safety Division during this quarter started publication of a weekly aviation accident summary and a monthly aviation pamphlet. Both are designed to direct supervisory attention to the aircraft accident situation and present possible causes and cures. Command supervision continues to be the central theme of Aviation Safety conferences and meetings.
6. A copy of this indorsement is provided the Aviation Brigade.

FOR THE COMMANDER:

6 Incl  
nc

JAMES R. PERRY  
Major, AVC  
Asst Adjutant General

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HEADQUARTERS  
UNITED STATES ARMY VIETNAM  
APO San Francisco 96307

26 February 1966

GENERAL ORDERS  
NUMBER 1313

1. TO 002. Following unit ORGANIZED.

AVIATION BRIGADE (PROVISIONAL)

Asg to: United States Army Vietnam

Eff date: 1 March 1966

Auth str: OFF NO ENL ACC  
30 1 83 114

Equip: Equip req WB obtained from local resources.

Per: WB assigned as resources become available.

Files/rec: IAW AR 345-210 or AR 345-215 as applicable.

MR: IAW AR 335-60

Mcn: To provide command, staff planning, control and administrative supervision of two aviation groups.

Auth: VOGG

Fund oblig: NA

Sp instr: NA

FOR THE COMMANDER:

OFFICIAL:

RICHARD J. SEITZ  
Brigadier General, US Army  
Chief of Staff

s/C.P. Moore  
t/C.P. MOORE  
Capt, AGC  
Asst Adjutant

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10-Aviation Brigade (Provisional)  
10-United States Army Vietnam

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7-CINCUSARPAC  
2-CINCUSARPAC ATTN: Historian File

A TRUE COPY:

*William B. Mathes*  
WILLIAM B. MATHES  
Major, Infantry  
S-3

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STATION LIST

<u>UNIT</u>	<u>LOCATION</u>	<u>APO</u>
Aviation Brigade (Prov)	Saigon	96307
125th Air Traffic Control Co	Tan Son Nhut	96307
<u>12th Aviation Group</u>	Tan Son Nhut	96307
120th Aviation Company (AML)	Tan Son Nhut	96307
98th Transportation Detachment	Tan Son Nhut	96307
129th Medical Detachment	Tan Son Nhut	96307
<u>11th Aviation Battalion</u>	Phu Loi	96289
116th Aviation Company (AML)	Phu Loi	96289
283rd Signal Detachment	Phu Loi	96289
392nd Transportation Detachment	Phu Loi	96289
431st Medical Detachment	Phu Loi	96289
128th Aviation Company (AML)	Phu Loi	96289
285th Signal Detachment	Phu Loi	96289
393rd Transportation Detachment	Phu Loi	96289
432nd Medical Detachment	Phu Loi	96289
147th Aviation Company (MH)	Vung Tau	96291
171st Transportation Detachment	Vung Tau	96291
772nd Medical Detachment	Vung Tau	96291
162nd Aviation Company (AML)	Phuoc Vinh	96289
407th Transportation Detachment	Phuoc Vinh	96289
450th Signal Detachment	Phuoc Vinh	96289
758th Medical Detachment	Phuoc Vinh	96289
173rd Aviation Company (AML)	Lai Khe	96227
408th Transportation Detachment	Lai Khe	96227
451st Signal Detachment	Lai Khe	96227
759th Medical Detachment	Lai Khe	96227
178th Aviation Company (MH)	Phu Loi	96289
400th Transportation Detachment	Phu Loi	96289
<u>13th Aviation Battalion</u>	Can Tho	96215
5th Quartermaster Detachment	Soc Trang	96296
13th Security Platoon	Can Tho	96215
53rd Quartermaster Detachment	Can Tho	96215
62nd Quartermaster Detachment	Vinh Long	96357
69th Infantry Detachment (RADAR)	Soc Trang	96296
78th Artillery Detachment (RADAR)	Soc Trang	96296

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STATION LIST

<u>UNIT</u>	<u>LOCATION</u>	<u>AFPO</u>
<u>Aviation Brigade (Prov)</u>	Saigon	96307
125th Air Traffic Control Co	Tan Son Nhut	96307
<u>12th Aviation Group</u>	Tan Son Nhut	96307
125th Aviation Company (AML)	Tan Son Nhut	96307
125th Transportation Detachment	Tan Son Nhut	96307
129th Medical Detachment	Tan Son Nhut	96307
<u>11th Aviation Battalion</u>	Phu Loi	96269
116th Aviation Company (AML)	Phu Loi	96269
283rd Signal Detachment	Phu Loi	96269
392nd Transportation Detachment	Phu Loi	96269
431st Medical Detachment	Phu Loi	96269
128th Aviation Company (AML)	Phu Loi	96269
285th Signal Detachment	Phu Loi	96269
393rd Transportation Detachment	Phu Loi	96269
432nd Medical Detachment	Phu Loi	96269
147th Aviation Company (MH)	Vung Tau	96291
171st Transportation Detachment	Vung Tau	96291
772nd Medical Detachment	Vung Tau	96291
162nd Aviation Company (AML)	Phuoc Vinh	96269
407th Transportation Detachment	Phuoc Vinh	96269
450th Signal Detachment	Phuoc Vinh	96269
758th Medical Detachment	Phuoc Vinh	96269
173rd Aviation Company (AML)	Lai Khe	96227
406th Transportation Detachment	Lai Khe	96227
451st Signal Detachment	Lai Khe	96227
759th Medical Detachment	Lai Khe	96227
178th Aviation Company (MH)	Phu Loi	96269
400th Transportation Detachment	Phu Loi	96269
<u>13th Aviation Battalion</u>	Can Tho	96215
5th Quartermaster Detachment	Soc Trang	96296
13th Security Platoon	Can Tho	96215
53rd Quartermaster Detachment	Can Tho	96215
62nd Quartermaster Detachment	Vinh Long	96357
69th Infantry Detachment (RADAR)	Soc Trang	96296
78th Artillery Detachment (RADAR)	Soc Trang	96296

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<u>UNIT</u>	<u>LOCATION</u>	<u>APO</u>
20th Aviation Detachment (ASTA)	Phu Bai	96308
92nd Aviation Company (OV-2)	Qui Nhon	96238
51st Transportation Detachment	Qui Nhon	96238
220th Aviation Company (O-1)	Phu Bai	96308
231st Signal Detachment	Phu Bai	96308
<u>52nd Aviation Battalion</u>	Pleiku	96318
19th Quartermaster Detachment	Pleiku	96318
24th Quartermaster Detachment	Pleiku	96318
52nd Quartermaster Detachment	Ban Me Thuot	96297
52nd Security Platoon	Pleiku	96318
68th Infantry Detachment (RADAR)	Pleiku	96318
77th Artillery Detachment (RADAR)	Pleiku	96318
119th Aviation Company (AML)	Pleiku	96318
70th Signal Detachment	Pleiku	96318
94th Medical Detachment	Pleiku	96318
545th Transportation Detachment	Pleiku	96318
155th Aviation Company (AML)	Ban Me Thuot	96297
8th Medical Detachment	Ban Me Thuot	96297
165th Transportation Detachment	Ban Me Thuot	96297
208th Signal Detachment	Ban Me Thuot	96297
161st Aviation Company (AML)	Phu Tai	96238
406th Transportation Detachment	Phu Tai	96238
449th Signal Detachment	Phu Tai	96238
756th Medical Detachment	Phu Tai	96238
170th Aviation Company (AML)	Pleiku	96318
405th Transportation Detachment	Pleiku	96318
448th Signal Detachment	Pleiku	96318
755th Medical Detachment	Pleiku	96318
172nd Aviation Company, 2nd Platoon		
Section 1	Pleiku	96318
Section 2	Da Nang	96337
174th Aviation Company (AML)	Phu Tai	96238
409th Transportation Detachment	Phu Tai	96238
452nd Signal Detachment	Phu Tai	96238
770th Medical Detachment	Phu Tai	96238
219th Aviation Company (O-1)	Pleiku	96318
203rd Signal Detachment	Pleiku	96318

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(21)

UNIT	LOCATION	AFO
57th Aviation Company (CV-2)	Vung Tau	96291
136th Transportation Detachment	Vung Tau	96291
61st Aviation Company (CV-2)	Vung Tau	96291
326th Transportation Detachment	Vung Tau	96291
73rd Aviation Company (CV-1)	Vung Tau	96291
134th Aviation Company (CV-2)	Can Tho	96215
260th Transportation Detachment	Can Tho	96215
<u>17th Aviation Group</u>	Nha Trang	96240
<u>10th Aviation Battalion</u>	Dong Ba Thin	96312
22nd Quartermaster Detachment	Dong Ba Thin	96312
46th Aviation Company (AML)	Phan Rang	96321
286th Medical Detachment	Phan Rang	96321
390th Transportation Detachment	Phan Rang	96321
117th Aviation Company (AML)	Dong Ba Thin	96312
130th Medical Detachment	Dong Ba Thin	96312
140th Transportation Detachment	Dong Ba Thin	96312
256th Signal Detachment	Dong Ba Thin	96312
129th Aviation Company (AML)	Dong Ba Thin	96312
296th Signal Detachment	Dong Ba Thin	96312
394th Transportation Detachment	Dong Ba Thin	96312
433rd Medical Detachment	Dong Ba Thin	96312
135th Aviation Company (CV-2)	Dong Ba Thin	96312
258th Transportation Detachment	Dong Ba Thin	96312
171st Aviation Company, 2nd Platoon	Nha Trang	96240
Section 1	Bien Hoa	96227
Section 2		
<u>14th Aviation Battalion</u>	Nha Trang	96240
14th Security Platoon	Nha Trang	96240
87th Quartermaster Detachment	Nha Trang	96240
I Corps Aviation Company (Prov)	Da Nang	96337
16th Aviation Company (U-1)	Nha Trang	96240
256th Transportation Detachment	Nha Trang	96240

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UNIT	LOCATION	APC
101st Aviation Battalion, Company A (AML)	Soc Trang	96296
41st Medical Detachment	Soc Trang	96296
167th Transportation Detachment	Soc Trang	96296
277th Signal Detachment	Soc Trang	96296
114th Aviation Company (AML)	Vinh Long	96357
83rd Medical Detachment	Vinh Long	96357
96th Signal Detachment	Vinh Long	96357
544th Transportation Detachment	Vinh Long	96357
121st Aviation Company (AML)	Soc Trang	96296
80th Transportation Detachment	Soc Trang	96296
257th Signal Detachment	Soc Trang	96296
221st Aviation Company (O-1)	Soc Trang	96296
325th Signal Detachment	Soc Trang	96296
502nd Aviation Battalion, Company A (AML)	Vinh Long	96357
28th Signal Detachment	Vinh Long	96357
150th Transportation Detachment	Vinh Long	96357
145th Aviation Battalion	Bien Hoa	96227
67th Infantry Detachment (RADAR)	Bien Hoa	96227
76th Artillery Detachment (RADAR)	Bien Hoa	96227
145th Security Platoon	Bien Hoa	96227
774th Medical Detachment	Bien Hoa	96227
68th Aviation Company (AML)	Vung Tau	96291
282nd Signal Detachment	Vung Tau	96291
391st Transportation Detachment	Vung Tau	96291
430th Medical Detachment	Vung Tau	96291
74th Aviation Company (O-1)	Phu Loi	96289
320th Signal Detachment	Phu Loi	96289
563rd Transportation Detachment	Phu Loi	96289
118th Aviation Company (AML)	Bien Hoa	96227
93rd Medical Detachment	Bien Hoa	96227
198th Signal Detachment	Bien Hoa	96227
573rd Transportation Detachment	Bien Hoa	96227
197th Aviation Company (AML)	Bien Hoa	96227
571st Transportation Detachment	Bien Hoa	96227
501st Aviation Battalion, Company A (AML)	Bien Hoa	96227
94th Signal Detachment	Bien Hoa	96227
151st Transportation Detachment	Bien Hoa	96227
Aviation Battalion (Fixed-Wing) (Prov)	Vung Tau	96291
54th Aviation Company (U-1)	Vung Tau	96291
255th Transportation Detachment	Vung Tau	96291

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HEADQUARTERS  
UNITED STATES ARMY VIETNAM  
APO San Francisco 96307

GENERAL ORDERS  
NUMBER 1690

15 March 1966

NAMING OF AREA. . . . .SECTION I  
AMENDMENT OF ORDERS. . . . .SECTION II

SECTION I

1. TC 362. Following area NAMED.

Former name: NA

New Name: Pershing Field Installation (Temporary)

Location: The immediate area upon which the USARV Transient Stockade is located.

Effective date: VCOG (1 Mar 66) Confirmed

Authority: AR 210-10

Sp instr: Commanding Officer, 89th Military Police Group, APO 96307 is designated Commander of Pershing Field Installation.

SECTION II

2. TC 370. Following orders AMENDED.

EXO: Para 1, TC 002, GO 1313, this HQ, CS

Port to: Organization of Aviation Brigade (Provisional)

As roads: Men: To provide command, staff planning, control and administrative supervision of two aviation groups.

IATR: Men: To provide command, staff planning and administrative supervision of two aviation groups.

FOR THE COMMANDER:

OFFICIAL:

RICHARD J. SEITZ  
Brigadier General, US Army  
Chief of Staff

s/Henry R. Griffin  
t/HENRY R. GRIFFIN  
Lt Colonel, AGC  
Asst Adjutant General

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GENERAL ORDERS NUMBER 1690 dated 15 March 1966 HEADQUARTERS UNITED STATES  
ARMY VIETNAM APO 96307 (Cont)

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10-Aviation Brigade (Provisional)  
10-United States Army Vietnam  
10-CO, 89th Military Police Group APO 96307

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A TRUE COPY:

*William R. Mathes*

WILLIAM R. MATHES  
Major, Infantry  
S-3

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DEPARTMENT OF THE ARMY  
HEADQUARTERS, UNITED STATES ARMY VIETNAM  
APO US Forces 96307

AVC-P

25 March 1966

SUBJECT: Letter of Instructions, US Army Aviation Brigade Vietnam  
(Provisional) (U)

TO: Commanding General  
US Army Aviation Brigade, Vietnam (Prov)  
APO US Forces 96307

1. (C) PURPOSE: To establish responsibilities, command relationships, provide guidance and prescribe terms of reference applicable to operations and functions of the US Army Aviation Brigade, Republic of Vietnam.
2. (C) OBJECTIVE: To provide effective command, and efficient utilization of Army Aviation Groups in support of counterinsurgency operations in the Republic of Vietnam.
3. (C) MISSION: To provide command less operational control, staff planning and administrative supervision of two aviation groups and provide aviation support, as directed, to US, ARVN, and other Free World Military Assistance Forces for the conduct of combat, logistical or other counterinsurgency operations throughout the Republic of Vietnam.
4. (C) FUNCTIONS:
  - a. Exercise command of all assigned Aviation Groups, and separate units assigned or attached to the Brigade, less that operational control specifically withheld by COMUSMACV or CG, USARV.
  - b. Provide as required or directed, from assigned or attached resources, aircraft to support airmobile assault, aerial battlefield surveillance, aerial fire support, search and rescue, air transportation and other related Army Aviation missions.
  - c. Provide air transportation to HQs USMACV and HQs USARV when directed.
  - d. Plan, implement, and coordinate security and administrative measures for assigned and attached units.

GROUP - 4

Downgraded at 3 year intervals;  
Declassified after 12 years.

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AVC-P

SUBJECT: Letter of Instructions, US Army Aviation Brigade Vietnam  
(Provisional) (U)

e. Provide administrative services and personnel records keeping for personnel organic to Brigade Headquarters. Collect, analyze, and report aviation statistical data. Prepare and submit recurring aviation reports as directed. Monitor crew and noncrew flight pay status. Exercise court martial jurisdiction, and review of Article 15 action, over assigned Groups and other assigned or attached units, as appropriate.

f. Evaluate and disseminate to appropriate units and agencies lessons learned by the Aviation Brigade, and assigned or attached units, as a result of counterinsurgency operations, to include techniques of employment, doctrine changes, tactics and equipment used.

g. Operate a Brigade flight safety and standardization program. ✓

h. Plan and prepare for changes in aviation units and aircraft within the Brigade in accordance with USARV master plan for distribution of aviation assets.

i. Plan for contingency employment of the aviation units in the Brigade to include alternate command posts, unit locations, aviation staffs, and equipment required for operations.

j. Provide timely information, estimates and recommendations to CG, USARV on Army Aviation studies and analyses.

k. Determine requirements for resources for the Aviation Brigade to include manpower, facilities, equipment and time phasing.

l. Conduct tests and make recommendations on research and development matters as pertains to aviation within the Brigade.

m. Plan and conduct inspections of personnel, material, and training of subordinate units to determine and evaluate unit readiness condition.

5. (C) CONCEPT OF OPERATIONS:

a. Aviation Groups with the Aviation Brigade, and separate assigned or attached aviation units, will be employed in accordance with established doctrine of decentralized control to the lowest level that will provide the ground commander with intimate and responsive support. The Brigade Headquarters will provide the necessary centralized command, staff planning, administrative management supervision.

GROUP - 4

Downgraded at 3 year intervals;  
Declassified after 12 years.

2

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AVC-P

SUBJECT: Letter of Instructions, US Army Aviation Brigade Vietnam  
(Provisional) (U)

b. Appropriate logistical support, air items issue, and aircraft maintenance and supply support will be provided by 34th General Support Group (Aircraft Maintenance and Supply) (AAMS). Signal, Medical, Engineer and other appropriate technical services will be provided by elements assigned or attached to HQs USARV.

6. (C) COMMAND RELATIONSHIPS:

a. The Army Aviation Brigade will operate and function as a major subordinate unit under the command of CG, USARV.

b. The Army Aviation Brigade Commander will also function as the USARV Aviation Officer and he will operate under the direct supervision of the Chief of Staff, USARV.

c. All official correspondence with higher headquarters will be routed to HQs USARV.

7. (C) COORDINATION:

a. Liaison with MACV on aviation matters will be the responsibility of HQs USARV.

b. Direct coordination as appropriate and required is authorized with US Forces, agencies and activities subordinate to this headquarters to accomplish missions.

8. (U) REPORTS:

a. Significant Actions Report, to include progress in assuming and accomplishing missions and functions, major problem areas and recommendations, will be submitted to reach this headquarters, ATTN: AVAV each Monday beginning 1 March 1966.

b. Other reports as directed by this and higher headquarters.

9. (U) SUPERSESSIONS: Letter, this headquarters, subject: Letter of Instructions to Commanding General, US Army Aviation Brigade (Provisional), dated 10 February 1966 is rescinded.

GROUP - 4

Downgraded at 3 year intervals;  
Declassified after 12 years

3

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AVC-P

SUBJECT: Letter of Instructions, US Army Aviation Brigade Vietnam  
(Provisional) (U)

FOR THE COMMANDER:

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- 5 - IV Corps
- 2 - CG 18th Engr Bde
- 5 - CG 1st Log Comd
- 2 - CO 12th Avn Gp
- 2 - CO 17th Avn Gp
- 2 - CO 34th Gen Spt Gp (AM2S)
- 2 - G1
- 5 - G3
- 5 - G4
- 15 - Avn Off (10 Avn Bde)
- 2 - MACV

A TRUE COPY:

*William R. Mathes*  
WILLIAM R. MATHES  
Major, Inf  
S-3

GROUP - 4

Downgraded at 3 year intervals;  
Declassified after 12 years.

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DEPARTMENT OF THE ARMY  
HEADQUARTERS, USA AVIATION BRIGADE (PROVISIONAL)  
APO US Forces 96307

AVED

7 March 1966

COMMANDER'S NOTES  
NUMBER 1

1. This is the first in a series of Commander's Notes which I will publish from time to time as a means of getting "the word" and current thinking to all concerned. Paragraphs 2 and 3 contain matters discussed and guidance presented at the Commander's Conference held this date.

2. POLICY

a. Flying Standardization. A flying standardization section will be organized in Brigade Headquarters ASAP. Mission: To standardize techniques and procedures used by subordinate command flying standardization sections, and to spot check battalion standardization IPs and individual aviators for correct techniques and procedures. Flying standardization sections at group and battalion level are desired.

b. Aircraft Maintenance Standardization. Aircraft maintenance techniques and procedures throughout this command should be standardized, wherever practicable, in much the same fashion as flying standardization. Commanding Officer, 34th Group (AM&S) will be requested to undertake this project, to include the use of spot check teams. As a matter of priority, initially, reports of spot checks will not be distributed to headquarters higher than battalion, and in all instances they will first be discussed between the senior officer from the spot check team and the company commander concerned.

c. Training. For the time being, training emphasis throughout the Brigade will be accorded to the qualification of aviators newly arrived in-country for combat operations, and to the readiness of up to battalion size aviation units to undertake night air assault missions in conjunction with support of US Army ground forces. This headquarters will publish a tactics and techniques SOP covering these and other subjects as a first priority task. In the meantime all commanders must give continuing command emphasis to the above two training requirements. One objective of this program is to standardize flying tactics and operational techniques throughout the brigade to the extent that such standardization improves overall mission capability.

d. Crew Protective Armor. We must look into this subject carefully and thoroughly and again, standardize requirements. Items of crew protective armor must be requisitioned at the unit level. Recent correspondence to the field from USARV headquarters addresses the subject.

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e. Statistics. It is imperative that sound, meaningful and accurate statistics be maintained at all command echelons within the Brigade. In discussions at theater level, particularly when there are inter-service considerations involved, the ONLY way that I can present valid positions is through the presentation of facts born from accurate statistics. The Data Center of the USARV Aviation Office is available, in this regard, to assist any unit of the Brigade.

f. Use of Flight Surgeons and Chaplains. No commander at any echelon is sufficient unto himself. Among his most valuable advisors on the intangible side of individual behavior are the unit flight surgeon and chaplain. These two gentlemen can advise commanders properly only if they are in constant touch with the people in the unit and if they establish and maintain this contact by participating in all of the activities of the unit — combat, garrison and off-duty. We should have both a chaplain and a flight surgeon on every battalion staff and, insofar as possible, attached to companies which are not co-located with battalion headquarters.

### 3. DISCUSSION AND GUIDANCE

a. Autorotations. I encourage the practice of touch-down autorotations, emphasizing the zero-forward-airspeed technique, under properly controlled conditions for all helicopter aviators in this command. This places an especially heavy responsibility on the unit IP. Commanders must make sure that their IP's are up to the task before implementing touchdown autorotation training programs. A recent USARV TWX lays down the prerequisites for such training, (IP aboard, selected areas, close contact, etc.) but I'd like to emphasize that these are not substitutes for common sense. IP's should not permit touch down with heavily loaded birds on hot days, in gusty cross wind conditions, on paved (where available) runways, etc. The IP's must use their heads!

b. Pathfinders. I want to get cracking on standardizing pathfinder techniques for night airmobile operations throughout the Brigade. If I can swing it, we will borrow a pathfinder team from the 1st Air Cav Division and send them on an instructional tour around our battalions as a first step.

c. Individual Flight Equipment. Stay abreast of shortages in this field — especially flying glasses, gloves, and helmets — and keep me advised.

d. Use of Aircraft. I want an informed report from Commanding Officers of the 12th and 17th Aviation Groups during the first week of April citing examples of misuse or waste of Brigade aircraft or crews during the month of March.

e. Tan Son Nhut Congestion. We are directed to prepare a long-range plan for relocating all, or most, US Army aviation activities now on Tan Son Nhut to some other location. Development of this plan is a function of the USARV Aviation Office.

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f. 125th ATO Company. I need a recommendation from the USARV Aviation Office as to the approach and terminal control functions: which are or should be a responsibility of the 125th.

g. Survival Radios. I need to know the status of individual air crew survival radios. What types are we using? How many do we have? What types and how many should we have? Group CO's give me your views on this.

h. Personnel Rotation. This is going to be a problem of major proportion this summer, particularly in respect to aviators, crew chiefs and aircraft mechanics. Commanders at all echelons have got to stay abreast of the DERCS situation in their units to be sure that operational capability does not approach insufficiency due to personnel going home in droves. Swaps of officers and enlisted specialists should be encouraged between all units of the Brigade to alleviate the problem.

i. Organization of Medium Helicopter Companies. Why shouldn't a CH47 company be organized on a basis of 24 Hooks assigned?


j. Bullet Detectors. We have 500 non-directional bullet detectors inbound. I want them put to good use throughout the Brigade, especially on gun Hueys.

k. VNAF Copilots. You should all be aware of the long-range value to our common cause in RVN of thoroughly indoctrinating VNAF pilots in airmobile tactics and techniques as practiced by the US Army. One way to get started on this is to use selected VNAF helicopter qualified pilots in our aircrews. Don't knock the idea until you've thought about it.

l. O-1 Aviation Unit Reports. Until further notice I want an informal monthly report on what the O-1 units have been doing and how they've been doing it and - most especially - what they're NOT doing which is within their capabilities. I'll look for the first such report from each group to be in my headquarters by the 10th of April.

m. Aircraft Revetting. Commanding Officer, 17th Aviation Group, please keep me advised on actions you have underway and any ideas you develop with respect to protecting both fixed and rotary wing aircraft from PAVN and VC mortar fire while they are parked at their home bases.

n. Decorations. I want to be sure that we are liberal on the subject of awarding BSMS and SSs, instead of AMs and DFCs, to our crew members when they perform heroically beyond the call of duty, in a combat situation.

  
G. P. SENEFF JR.  
Brigadier General  
Commanding



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DEPARTMENT OF THE ARMY  
HEADQUARTERS, USA AVIATION BRIGADE (PROVISIONAL)  
APO US Forces 96307

AVBD

18 April 1966

COMMANDER'S NOTES  
NUMBER 2

1. GENERAL: Topics covered in these notes have been selected somewhat at random, but are considered pertinent to current needs and operations of the command. They are a resume of the items covered at the 8 April Commanders Conference.

2. TACTICS AND TECHNIQUES: All other combat branches of the Army have firm tactical doctrine. Liaison, communications, operational planning, support procedures and tactics have been developed over a long period of time and are accepted as standard throughout the military. It is apparent that we in Army Aviation must develop and implement standard tactics, techniques and operational procedures to enable the ground commanders to obtain optimum, consistent aviation support. To this end my staff is publishing Tactics and Techniques SOP. Basic doctrine will be along the principles which were developed, refined and proven over the years of air assault testing, and which have proven so successful in the 1st Air Cavalry Division. Comments from the field will be solicited when the draft manual is completed.

3. FORMATION FLYING: I am not at all satisfied with the formation flying I have observed to date. You are generally flying too close together laterally, and too strung out longitudinally. The principles of sound formation flight have been reviewed with appropriate commanders, and will be covered in detail in our forthcoming SOP. I would like to see an early effort to update our formation procedures along the lines I have described. To review the bidding, the purposes of formation flight are: Control; Ease of escort; To place the maximum number of troops on the ground, in a given area, in fighting formations; And to decrease the amount of time it takes to get several aircraft from point A to point B.

4. CONTROL OF GUNSHIPS: There have been far too many instances reported of indiscriminate firing of our gun birds which have resulted in needless friendly casualties. While I realize that the gun platoons are doing a magnificent job, I also insist that we exercise better judgement and control to insure we kill only what we know we need to kill and not what we think should be killed or fired at. I expect commanders down the line to give this matter their immediate and personal attention.

5. AVIATOR SHORTAGE: The current shortage of aviators should be common knowledge to all of you by now. As it stands, each of our young aviators has a very high probability of spending only one year out of country after completion of his current tour, then reassignment back here. I would like to encourage our people to consider what advantages they might derive by extending for six months or a year, with thirty day breaks in the duty tour to visit the family.

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6. REQUESTS FOR ORDERS: Unit requests for gunner, crew, non-crew, IP and standardization pilot orders have been subject to delays, and processed with errors and inaccuracies included. For the most part the major problems have been ironed out; however, it is still necessary to insure that the validity of these requests is verified at each level of command, and that delays in forwarding such requests are avoided. Note: Flight status is authorized for crew chiefs of float aircraft.

7. AIRCRAFT ACCIDENTS: The current rate at which we are breaking up our birds is appalling. The accident rate for March was the highest yet experienced. While I know that aircraft accidents are inevitable, I also know that many of these accidents could have been prevented. For example, let's look at just a few:

Aircraft Struck Object:	18
Aircraft Struck Parked Aircraft:	6
Hard Landing:	4
Lost RPM:	5 (10 in 2 months)
Meshed Blades:	2
Rotor Wash Caused Blades to Flex Into A/C:	2

"Head up and locked" accidents have got to go! Use of the UH-1 "Go-No-Go" Formula will prevent many of our RPM loss accidents. (See USARV Regulation 385-30). Object and aircraft strikes can be prevented by use of guides, hover lanes, etc. I am charging commanders at all levels with the responsibility for exerting more control and supervision over the activities of our aviators. Complacency or carelessness will not be condoned! I expect a colateral investigation to be conducted in all cases where it is apparent to the commander concerned that violation or disregard of procedures and regulations or carelessness has occurred.

8. IMPRESSION OF AVIATION UNITS: We need to "buck up" our image in the eyes of others. Although Army aviation is making a big name for itself and the Army in general over here, we still have some distance to go in putting our house in order. Start with the individual, his appearance and soldierly attributes, and extend it throughout all of our activities. There are still skeptics who must be shown that we are soldiers as well as aviators and mechanics. Any bad impression or adverse publicity created by an aviation unit or individual is manifestly detrimental to all we are striving for. We must keep all of our actions and activities on the highest plane of excellence.

9. USAR COMMISSIONS: Letter, Headquarters, USARV, Subject: Delegation of Authority to Appoint Reserve Second Lieutenants with Concurrent Active Duty, dated 21 March 1966, outlines procedures to be followed by warrant officers and eligible enlisted men in grades E5-E9 in applying for commissions. We should encourage all of our eligible, outstanding warrants and enlisted personnel to take advantage of this program.

10. REPORTS: A Letter of Instructions will soon be published by this headquarters. Included will be a paragraph on reports and reporting procedures. In the interim I would like to point out that our routine USARV administrative and operational reports will be handled direct between groups and USARV, with

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this headquarters receiving information copies of all reports. Downed aircraft reports should be called to this headquarters, as should reports of serious incidents. In general, we need to do much better on getting the volume of reports in on time, particularly downed/lost/missing aircraft reports and crash facts messages.

11. EQUIPMENT: All are encouraged to review the items of unit equipment authorized and on hand but not used, excesses, etc, with an eye toward requesting turn-in of all that is not mission essential. USARV G-4 will process turn-in requests. By the same token we should look at our equipment status, across the board, to determine if it is possible to laterally transfer certain critical items within or between commands to give everyone an equal operating capability.

12. INFORMATION PROGRAM: Although there is an Information Bulletin in publication explaining our information program, I would like to emphasize the need to record and submit for publication, or radio broadcast, all newsworthy items concerning our personnel and units. Our people are doing a tremendous job and deserve recognition for the job they are doing. My Information Officer should be contacted for any assistance or advice you require to get your stories into the news stream.

13. MAINTENANCE: It has recently become apparent that sufficient time and effort is not being devoted to the maintenance of all items of unit equipment. We must initiate and pursue effective preventive maintenance programs if we are to have reliable equipment on hand to enable mission accomplishment. This matter will be a primary item of interest during staff visits and inspections.

14. STAFF RELATIONSHIPS: Excessive working and response time can be lost in any command when each action is requested or directed in writing. Further, the written word is easily subject to misinterpretation. As a matter of policy I would like to do away with as much paperwork as possible. To this end I desire maximum use of voice communications, and to point out that my staff speaks for me. Any instructions issued by my staff are in my name, and I expect positive results with minimum delay. By the same token you may expect positive response to your requests for actions or assistance from my staff. Any violation of this policy should be brought to my attention for corrective action.

15. EFFICIENCY REPORTS: Accurate rating and indorsing of our officers is of vital concern to me. History indicates we have done unintentional damage to fellow aviators by not keeping pace with the rest of the Army as far as good reports for deserving individuals is concerned or submission of frank and descriptive reports where mediocre or poor performance has been the case. We must take the time and pains to counsel our officers prior to rating them and then accurately and completely describe the manner in which they performed assigned and additional duties. I expect good quality reports from each rater and indorser, well thought out, and equal to duty performance, whether good or bad.

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16. CLUBS AND ASSOCIATIONS: Audits of our club activities have reflected very poor organization and operating procedure. In some cases clubs are operating without charter. All audits have contained record of uncorrected deficiencies from previous audits. We need to provide clubs and associations for our personnel in an effort to make free time as relaxing as possible, but we cannot afford to do it in a slipshod manner. Commanders have been requested to look into this matter and to make sure that our club operations are in good taste, legal and sound.

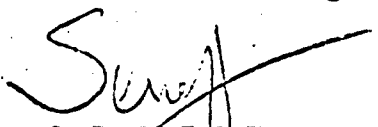
17. EXCHANGE OF STAFF OFFICERS: As possible, I would like to see a two to three day exchange of Battalion Executive Officers and S-3s. Purpose of this drill is to promote the exchange of ideas and afford each unit the opportunity to see how the other guy is doing the job.

18. ASSIGNMENT AND UTILIZATION OF AVIATORS: We are doing all possible to get non-rated officers assigned throughout the command to perform administrative and logistics duties. As it stands today we can allow 112 rated officers to assume flying duties through assignment of non-rated types to units and staff positions. We will also be receiving increased numbers of Lieutenant Colonels to take over existing staff slots. As a matter of policy, the following is announced: Battalion commanders will normally command for their full tour; Headquarters will be operated at 85% of authorized aviator strength; Units will be staffed at 90% of authorized aviator strength; and newly arrived aviators will spend the first half of their tour in combat units with the requirements for rear area flying assignments being met by pulling in people who have given good service for at least 6 months in combat units.

19. CIVIC ACTION PROGRAM: Brigade units are all involved in extremely large and worthwhile civic action programs and developments. We will do our utmost to obtain recognition for your efforts. Keep up the good work!

20. COMBAT STAR FOR CREW WINGS: The Commanding Officer of the 145th Aviation Battalion has developed a rather novel idea as concerns a combat star to be worn on our wings similar to the combat jump star on paratrooper wings. We are going to review the bidding on this and informally attempt to standardize criteria. Any comments from the command should be submitted to my S-1.

21. AIR MEDAL FLIGHT LOG CERTIFICATION: Control of award of the Air Medal to persons who are actually not entitled to it lies to some degree with those of us who are called upon to certify flight logs. Prior to such certification, regardless of missions or hours flown, it is imperative that the individuals provide some element of proof that they participated in aerial flight in a capacity other than as passenger, and that such participation reflected meritorious achievement in aerial flight.

  
G. P. SAUER, JR.  
Brigadier General, USA  
Commanding

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145

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HEADQUARTERS  
UNITED STATES ARMY VIETNAM  
APO San Francisco 96307

GENERAL ORDERS  
NUMBER 1892

28 March 1966

ORGANIZATION OF UNIT. . . . . SECTION I  
AMENDMENT OF ORDERS . . . . . SECTION II

SECTION I

1. TO 002. Following unit ORGANIZED.

II FIELD FORCE VIETNAM AVIATION FLIGHT DETACHMENT (PROVISIONAL)

Ass to: Headquarters, II Field Force Vietnam

Eff date: 15 March 1966

Auth str: 

OFF	MO	FM	AGC
3	15	36	54

Equip: WB provided from USAFV resources for 50% fill.

Pers: WB provided from USAFV resources for 50% fill.

Files/rec: IAW AR 345-210 or AR 345-215 as appropriate.

MOR: NA

Msn: To provide aviation support to Headquarters, II Field Force Vietnam.

Auth: VCOG

Fund oblig: NA

Sp instr: NA

SECTION II

2. TO 370. Following orders AMENDED.

SNO: Para 4, Sec IV, TO 015, GO 1008, this HQ, CS

Pert to: Operational Control of 125th Air Traffic Control Company

As reads: Operational Control of Headquarters, United States Army Vietnam.

IATR: Operational Control of Aviation Brigade (Provisional) effective 25 March 1966.

FOR THE COMMANDER:

OFFICIAL:

RICHARD J. SEITZ  
Brigadier General, US Army  
Chief of Staff

s/Henry R. Griffin  
t/HENRY R. GRIFFIN  
Lt Colonel, AGC  
Asst Adjutant General

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- 2-Postal Officer, USAFV
- 10-125th Air Traffic Control Company
- 10-Headquarters, Special Troops, US Army Vietnam
- 10-Headquarters United States Army, Vietnam
- 10-II Field Force Vietnam Aviation Flight Detachment (Provisional)
- 10-Headquarters, II Field Force Vietnam

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A TRUE COPY

ROBERT B. ZICK  
Major, Inf  
Asst S-3

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OR DISCLOSURE OF SAFEGUARDED RECORDS

INVESTIGATIONS  
DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT  
WASHINGTON, D. C. 20310

ADMIN:

4 2 AUG 1965

SUBJECT: Letter of Transmittal

TO: SUB DISTRIBUTION

Forwarded as inclosure is an Operational Report - Lessons Learned, by 5th Engineer Group (Constructive), dated 15 May 1965. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations. The Lessons Learned cited in this report have not been evaluated by the Department of the Army and do not necessarily reflect official doctrine or approval but may be adapted for use in developing training material.

FOR THE ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT:

1 Incl  
as

JACK B. MATTHEWS  
Colonel, GS  
Acting Director, Organization,  
Unit Training & Readiness, OACSFOR

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BERNARD H. RAY  
Lieutenant Colonel, GS  
Acting Chief, Readiness  
Division, OT, OACSFOR

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HEADQUARTERS  
35TH ENGINEER GROUP (CONSTRUCTION)  
APO U. S. Forces 96322

15 May 1966

EGA-00

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966 (RCS CSGPO-26 (RI))

TO: Assistant C of S for Forces Development  
Department of the Army (ACS for DA)  
Washington D.C. 20310

1. Significant organization or unit activities:

a. During the period from 1 January 1966 to 30 April 1966, the 35th Engineer Group (Construction) was responsible for all non-divisional troop construction in the central third of the Republic of Vietnam. The area of construction responsibility is further defined as: That portion of the RVN lying South of 13 degrees North Latitude, excluding the area bounded by the right bank of the Song Da Rang River, extending southwest to a straight line boundary drawn between coordinate YU 2845 to coordinate 250278. Map Series Sheet NX 48-16, NC 48-4 and NC 48-8, Series L-509, 1/250,000.

b. The main construction effort continued to be concentrated at Cam Ranh Bay for the development of the Cam Ranh Bay Logistics Area, Depot and port facilities. The effort of one construction battalion was employed at Phan Rang, RVN, in the construction of an expeditionary airfield. One combat battalion was employed at Dong Ba Thin, RVN, in the construction of the Dong Ba Thin Military Complex. Additional construction forces were also employed at Nha Trang, Tuy Hoa, Phan Thiet, and Boa Loc.

c. During the reporting period the following units were attached to and under operational control of the 35th Engineer Group (Construction).

<u>UNIT</u>	<u>LOCATION</u>
20th Engineer Battalion (C)(A)	Dong Ba Thin
39th Engineer Battalion (C)(A)	Cam Ranh Bay
62d Engineer Battalion (Const)	Phan Rang
67th Engineer Battalion (Const)	Cam Ranh Bay
864th Engineer Battalion (Const)	Cam Ranh Bay
102d Engineer Company (CS)	Cam Ranh Bay

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DDA-60

15 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966 (NOS OCSFC-23 (1.1))

UNIT

LOCATION

197th Engineer Company (FC) (-)

Cam Ranh Bay

553d Engineer Company (FC) (-)

Cam Ranh Bay

During the reporting period the 564th Engineer Company (IE) and 513th Engineer Company (VI)(-) were attached to and under operational control of the 20th Engineer Battalion (C) (A). The 572d Engineer Company (IE) was attached to and under operational control of the 39th Engineer Battalion (C) (A).

This report will include only activities of the Headquarters, 35th Engineer Group and separate companies, as the attached battalions are required to prepare individual separate reports.

d. 102d Engineer Company (Construction Support)

(1.) Asphalt Operations

(a) On 22 February 1966 the asphalt plant produced its first mix. The project was in support of the 864th Engineer Battalion (Const). 3,394 tons of cold asphalt mix consisting of one inch minus aggregate and MU-2 was produced. The mix was used to pave three fourths of a mile of road in the Cam Ranh Bay Depot area. On 8 March 1966 a one tenth mile test strip was successful and all paving is now done with hot mix. To date, the asphalt plant has produced 6,066 tons of hot mix. Two and three quarters of a mile of road have now been paved in the Cam Ranh Bay area.

(b) The asphalt plant is now fully operational and is capable of supporting all paving missions.

(2) Quarry Operations

(a) During the period from 1 January 1966 to 20 April 1966 the quarry produced 10,771 tons of rock. This rock was used entirely for the asphalt plant. On 20 April 1966 the 102d Engineer Company quarry ceased operations. All equipment was moved to the new 864th Engineer Battalion quarry.

(b) To date, aggregate produced by the 864th Engineer Battalion Quarry is of a low grade for asphalt production. The new quarry has just recently been opened and a large amount of overburden and decomposed granite is present. As the new

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DAI-03

15 May 1966

SUBJ: Operational Report on Lessons Learned for Quarterly period  
Ending 30 April 1966 (RCS 00070-20 (RI))

quarry is developed a high grade of aggregate for asphalt will become available.

(3) Equipment Support: During this reporting period the unit supported the 84th Engineer Battalion Quarry with three items of Quarry equipment and had a number of pieces of equipment, such as rollers, distributors, 20-Ton and 40-Ton cranes and trucks in support of other units. The receipt of three new 40-Ton cranes and two AC tractors has increased the units effectiveness in its support mission.

(4) Maintenance: The readiness posture of this unit has steadily been improving. The arrival of new equipment and the continued success of Red Ball requisitions has kept the majority of equipment operating.

(5) Civic Action:

(a) The unit has three civic action projects. School supplies, medical, and dental aid are being given to Cam Ranh Village and Xon Moi schools.

(b) Food, clothing, and medical supplies are being donated by the Camas-Washougal Washington Chamber of Commerce. Private families are sending these supplies to the Chamber of Commerce who then send them to the unit. This unit then donates the clothing and supplies to the Nha Trang orphanage.

(c) In appreciation for the support the families in the state of Washington have contributed, plaques making the families honorary members of the 102d Engineer Company have been sent to them.

e. 497th Engineer Company (Port Construction)

(1) Projects, Cam Ranh Bay.

(a) Design and construct sheet pile bulkhead. During this period the company completed (19 February 1966) a sheetpile bulkhead of approximately 500 LF between the MAP Pier and the DeLong Pier Causeway. Facility was designed and construction was begun in December 1965. The hydraulic fill area behind the bulkhead provides 250,000 square feet of storage area.

(b) Barge discharge facility. The facility, designed and constructed by the 497th, is a timber pile U-shaped pier 220' x 113'. The facility was started on 1 February. The pier has ample mooring facilities for two barges. The project was completed on 15 April.

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101-30

15 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966 (RCS CSARP-28 (R1))

(c) Permanent RT Ramp. The 497th was directed to design and construct two RT ramps and adequate anchorage system. The overall project is 60% complete. The first ramp, constructed of sheet piling and reinforced concrete, was started on 20 January and completed on 25 March 1966.

(d) Roll-on, roll-off ramp. The company designed a permanent connection link from the storage area adjacent to the DeLong Pier, across the sheet pile bulkhead to barges, in turn to be joined with the USNS Combs. The connection consists of one 30-foot fixed span and one 30-foot articulating ramp. The design was started on 12 April and was completed on 22 April 1966.

(e) Diving Support. From time to time, the diving section is called upon for miscellaneous diving operations. Some examples include:

1. Submarine pipeline maintenance. The divers have repaired leaks and tightened underwater connections on submarine lines at Phan Rang and Nha Trang.

2. Remove Obstacles. Divers are in process of removing a 145 foot sunken vessel which is currently blocking the proposed path of a second sheet pile bulkhead. The general project of removing obstacles is continuous.

3. Underwater demolition. Diving section has performed underwater demolition work for the coral quarry operated by the 87th Engineer Battalion (Construction).

(f) Phan Rang interim marine POL terminal. The company provided technical assistance and diving support for the installation of a mooring system and submarine pipeline.

(g) Design and construct 497th Engineer Company cantonment area. The slabs for troop billets, administrative offices, officer's and NCO quarters, mess hall and day room, which were 90% complete on 1 January, were completed on 2 February. The framing of 12 medium tents started on about 4 April and to date is 75% complete.

(2) The company conducted about 20 hours of training in the following subjects: Maintenance of equipment, Code of Conduct, Survival, Escape and Evasion, the Vietnamese Soldier, Inflation in Vietnam, Vietnamese Customs and Traditions, Supply Economy, and Safety. In addition, the company adds to its classroom training a continuous CP program.

FORM-35

15 May 1966

SUBJECT: Operational Report on Activities Performed for Quarterly Period  
Ending 30 April 1966 (RMS GSOPC-35 (RI))

(3) No days were spent during the quarter for movements.

## 2. 553d Engineer Company (Fleet Bridge)

(1) During the reporting period the 553d Engineer Company (FB) carried out operations, activities, and administration appropriate to the unit's primary and secondary missions. The primary mission of this unit is to provide technical personnel and equipment to load, maintain, transport and supervise the erection of tactical stream crossing equipment. During the reporting period, this unit fulfilled its primary mission by the following activities:

(a) Provision of technical personnel and equipment for the erection of 1155 Feet of 1916 Floating Aluminum Highway Bridge at My Ca, Vietnam. This unit did not have enough organic bridging equipment to span the existing gap, and additional equipment was acquired from an ARVN Floating Bridge Company.

(b) Seventy-five (75) Feet of barge dock and trestle were erected at the DuLong Pier, CIB to facilitate loading and unloading of ships.

(c) Total Company man hours expended in the performance of primary mission activities for the reporting period was 15,640 man hours.

(2) The secondary mission of this unit is to provide general cargo hauling capabilities, by immobilizing the bridge loads. During the reporting period this unit fulfilled its secondary mission by providing cargo hauling for the following:

(a) RMK-DRJ Construction Company.

(b) ROK Marine Brigade

(c) 35th Engineer Group (Const)

(d) Total Company man-hours expended in the performance of secondary mission activities for the reporting period was 9,720 man-hours.

(3) In addition to performing its primary and secondary missions the following activities were carried out by this unit.

(a) Support Platoon equipment was utilized for reconnaissance, survey and soundings, and security patrols in the CIB area.

Page 10

15 May 1966

SUBJECT: Operational Review of the 507th Engineer Battalion Quarterly Period  
Ending 30 April 1966 (and covering 15 May 1966)

(3) Signals and (4) and air compressors (4) were utilized as construction supplies.

(5) The Company had to a new area and undertook self-help projects to provide living conditions for its personnel.

(6) Drivers in and out of the area were recommended for possible missions.

(7) A water pump was operated and improved for use of units in the CMB area.

(8) Two platoons remained attached to the 507th Engineer Company (ID) at Qui Nhon. These two platoons have been attached since 3 December 1965.

(9) The platoon was placed on USI 7 April 1966 to the Cam Ranh Bay Security Company (ID) for a period of 90 days.

(10) Three (3) and one (1) platoon were assigned to the 1/286th Engineer Battalion (ID) and 3/34th Engineer Battalion (ID) in Tay Hoa in early February 1966 to provide 4 1/2 tons of ammunition footbridge for tactical use.

(11) The following training was carried out for unit personnel:

- (a) Personal and Document Security
- (b) Escape and Evasion
- (c) Code of Conduct
- (d) Maintenance Responsibilities
- (e) Driver Training

## 2. Commander's Recommendations and Lessons Learned.

### a. Commander's Recommendations.

(1) Planners at higher level should initiate action with procurement section at the highest level to program special type supplies in bulk rather than wait for projects to be assigned to units and have units requisition through normal supply channels if item is not available in Engineer Supply yard. The regular supply system can not respond in the time required, in order for units to meet their completion dates. Some excellent examples of this are as follows:

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15 May 1966

SUBJECT: Operational Reports on Problems Reported for Quarterly Period  
Ending 30 April 1966 (AIR DISTWAL (AIR))

(a) Sheet Piling, 30 ft and 45 ft length

(b) 1" and 1 1/2", Galvalume, Galvanized

(c) Washers, 2- dia.

(d) Barlap

(e) Pipeline Supplies, PCL

(f) Welding Rod

(g) Timber

(2) Generators and Refrigeration:

(a) Engineer C that units should be permitted to make changes to augment their TCM's prior to leaving CONUS, to allow each unit to bring sufficient generators to operate when in a static position. Present TCM authorizes one 5kW generator per company, other than the 10kW's required to operate the water pumps.

(b) Due to climatic conditions in RVN, units should be authorized to bring refrigerators and deep freezers with them and not have to wait 5-6 months for the supply system to react.

(3) Return complete control of Engineer Construction supplies to Engineer Channels, along with the Engineer Supply Point Companies to give the commanders the control of the supplies that are needed to fulfill their mission.

(4) That previous detailed planning be initiated to preclude the extensive use of power boats and outboard motors. At the time of this report many powerboats and outboard motors were still on deadline status since their deadline in late 1965 due to excessive use. Rafting operations should not exceed one week to insure serviceability of powerboats and outboard motors.

(5) That training units in CONUS emphasize driver training for individuals who are to be deployed to RVN. Driver training should include:

(a) Road test

(b) Maintenance responsibilities

(c) International road signs

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1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

Figure 1. The effect of the concentration of the inhibitor on the rate of polymerization of  $\alpha$ -methylstyrene in the presence of  $\text{SnCl}_4$  at  $50^\circ\text{C}$ .

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

30. Although the above information was received in strict confidence by the Government, it is not being furnished to you in confidence. It is being furnished to you in confidence only because of continuing political considerations. It is requested that you keep this information in confidence, to the extent possible, and not to discuss it with any other persons. However, this does not mean that confidential informants involved in the above are required to maintain the confidentiality of the information.

[illegible]

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies obtained on the selective medium. The results are the mean of three independent experiments. Error bars represent standard deviation.

## THESE

11. Comments: The above price setting table regards to the 1970-71 Rubber Con-  
tract. The table have been found to be more effective than a three three-  
year (1970) period crop contract. One of the above farmer has expressed compli-  
ance of program, requesting delivery of the quantities of piling, such as  
bamboo pile piles and other pile materials.

Comments: Two other members could be effectively used by other units having well training capabilities, such as construction battalions, light equipment, and construction support companies.

Utilization of Party Organization: Germany

When: Productivity of new construction company is reduced when company is split for operational control between two engineer groups.

Explanation: Important in RVN has determined that when platoons and/or sections of company are separated from company headquarters by considerable distance, standards of maintenance decline, capability in using established personnel and equipment is decreased, and adequate technical assistance is curtailed.

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DDA-30

15 May 1966

SUBJECT: Operational Report of the 1st Airborne Engineer Battalion  
During 10 April 1966 (AGS 300000 (10))

Observation: The 1st Airborne Engineer Battalion is a company, it is preferable to assign to this  
unit a permanent mission. The company could be utilized as an  
engineer force in combat and with an engineer group developing a major  
port facility such as Chu Lai Bay.

#### Aggregate Production

##### Reclassification of Aggregate in Stockpiles

Discussion: In large stockpiles of one inch minus rock, poor gradation had  
resulted in a loss of aggregate in the stockpiles. This has resulted in a  
waste of aggregate in aggregate production.

Observation: Separating the stock pile into two piles, then recombining  
them in the asphalt plant has greatly reduced segregation. The one inch  
minus is now separated into piles of 1/2 to 3/8" and of 3/8" minus.

#### Retention of Fines

Discussion: Loss of fines during rock crushing.

Observation: It has been found that nearly all fines produced during crush-  
ing of 5/8" rock are lost by being blown away by the slightest breeze.  
These fines, passing the #100 sieve, are an essential component of aggregate  
used for the production of asphalt.

Observation: A spray bar was installed over the main feeder conveyor belt  
coming from the primary crusher. The crushed rock coming from the primary  
was sprayed with water before passing to the secondary crusher. In this  
manner, nearly all fines were retained.

*William F. Hart Jr.*  
WILLIAM F. HART JR.  
Colonel, GE  
Commanding

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DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT  
WASHINGTON 25, D.C.

ACSFOR

17 AUG 1966

SUBJECT: Letter of Transmittal

TO: SEE DISTRIBUTION

Forwarded as inclosure is Operational Report - Lessons Learned for Headquarters, 20th Engineer Battalion (CBT) 15 May 1966. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations. The lessons learned cited in this report may be adapted for use in developing training material.

FOR THE ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT:

1 Incl  
a/s

ARTHUR L. WEST, JR.  
Brigadier General, GS  
Director of Organization,  
Unit Training & Readiness, OACSFOR

ROBERT T. TOWNSEND  
Lt Colonel, GS  
Chief, Readiness Division

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HEADQUARTERS  
20TH ENGINEER BATTALION (CBT)  
APO San Francisco 96312

EOACBD-00

15 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966, Reports Control Symbol CSGPU-28(R)

THRU: Commanding Officer  
35th Engineer Group (Construction)  
APO San Francisco 96312

THRU: Commanding General  
18th Engineer Brigade  
APO San Francisco 96307

TO: Assistant Chief of Staff for Force Development  
Department of the Army (ACSFCD-DA)  
Washington, D.C. 20310

## Section I. Significant Organization Activities:

### 1. Narrative Summary of Activities.

a. POM and Deployment. The 20th Engineer Battalion (Cbt) was alerted for overseas movement on 3 September 1965 by Message DA 729668, Warning Message, Deployment to SEA (U), 011610Z September 1965. When alerted, the battalion was heavily committed with one line company at Camp Drum, New York on road construction, one reinforced squad at Camp Edwards, Massachusetts on range renovation, 90 individuals on special duty and TDY in support of Fort Devens, Massachusetts and Camp Drum, New York and the remainder of the battalion engaged in construction of range facilities at Fort Devens, Massachusetts.

The battalion was then short a total of 123 personnel, a result of heavy levy actions taken to fill units previously alerted.

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15 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966, Reports Control Symbol CSGPO-28(R1)

On receipt of alert notification, all personnel were recalled from special duty and TDY. The range projects at Fort Devens were transferred to the 86th Engineer Battalion (Cbt) from Fort Dix, New Jersey.

Immediate emphasis was placed on developing an intensified combat training program within the guidelines of ICTP8 (5-35D). The program was modified to seven weeks due to the limited time available prior to deployment. The major consideration in the development of such a program was the balance of time available versus the personnel and equipment available. Deployable strength of the battalion when training commenced on 20 September 1965 was approximately 30% of full TOE strength, with the majority of filler personnel scheduled to arrive during the third and fourth week of training. Emphasis was initially placed on cadre-type (key NCO) training with this emphasis shifting as rapidly as possible to unit training. Such action was necessary due to the projected late arrival of filler personnel on or after 10 October 1965. Lacking specific guidance on probable destination missions, the greater part of this unit training was geared to combat and combat support operations with emphasis on counterinsurgency. In this regard, FM 31-73 and USQNAARC Pamphlet 350-16, Leader's Guide for Operations in Southeast Asia, dated August 1965, proved particularly valuable as references. During the fifth week of the modified ICTP a three day battalion FTX was conducted providing the organization a valuable opportunity to tactically employ as a unit and undertake combat, combat support and construction missions. Continued arrival of filler personnel throughout the training period necessitated devoting seventh week training primarily to PQR qualification and critical tactical training geared to operations in Southeast Asia. As of 30 November 1965, 99.8% of assigned deployable personnel were PQR qualified.

Major emphasis was placed early after receipt of the alert order to inventory, repair and/or requisition all supplies and equipment required for deployment. During the period 10 to 30 October 1965, a total of 108 vehicles and major items of equipment were turned-in and about 100 were received. A significant shortage of organizational equipment persisted through the seventh week of training and included such major items as 15 each 2½ ton trucks and all radio mounts.

Upon receipt of the Movement Directive on 12 October 1965 and Movement Order on 14 October 1965, follow-up coordination was made with Headquarters, Fort Devens, to expedite the receipt of personnel fillers, vehicles and equipment. Task schedules, relating to each staff functional area, were established for internal control of all organization actions required to meet the Equipment Readiness Date of 18 November 1965 and the Personnel Readiness Date of 1 December 1965. In view of the short

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Ending 30 April 1966, Reports Control Symbol CSQFO-23(R1)

time remaining prior to P&D, a phased personnel pre-deployment leave schedule was established from 26 October 1965 to 29 November 1965 which granted each individual ten days leave. This schedule permitted all personnel to take leave, while providing at the same time sufficient personnel in garrison to prepare organizational equipment for movement and allow for the orderly closeout of administrative and property accounts at Fort Devens. Port calls for equipment and personnel were received on 21 November 1965 and 24 November 1965 respectively. The majority of equipment and supplies were outloaded at the Boston Army Terminal on the USNS Lt James E. Robinson which sailed on 5 December 1965. The remainder of the equipment was shipped by rail to Oakland Army Terminal, Oakland, California, where it was loaded on the MSTB Morgentau Victory for shipment to Vietnam. On 8 and 9 December 1965, the main body of the battalion departed Fort Devens, Massachusetts via various commercial and military aircraft for Oakland Army Terminal for loading on the USNS William Weigel. The ship departed for Vietnam on 9 December and arrived at Cam Ranh Bay, Vietnam on 1 January 1966. The Advance Party/Rear Detachment of the 20th left Fort Devens, Massachusetts on 14 December 1965 via C-130 aircraft and arrived in South Vietnam on 18 December 1965.

Upon deployment from CONUS the 20th Engineer Battalion (Cbt) had operational readiness condition ratings of C-1 in all major areas. Although C-1 in personnel, the shortage of 24 radio operators out of 27 authorized was considered critical to future combat support operations. During the pre-deployment period of PCN, the organization was given a CMMI, was provided a special unit readiness inspection by a Department of the Army Inspector General team and was periodically inspected for readiness posture by the Commanding General, First Army. Satisfactory ratings were obtained by all units and the organization found combat ready.

### b. Employment.

(1) Assignment. Upon arrival in Cam Ranh Bay, Republic of Vietnam, the battalion was attached for all purposes to the 35th Engineer Group (Construction), by General Order Number 5, Headquarters, 18th Engineer Brigade, APO US Forces 96307, dated 10 January 1966. Effective date of attachment was 1 January 1966.

(2) Mission. The primary mission of the battalion has been the construction of administrative, logistical and operating facilities for an Army Aviation complex within the Dong Ba Thin Permanent Military Area (see Inclosures 1 and 2).

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(3) Attachments and Detachments. General Order Number 4, Headquarters, 35th Engineer Group (Construction), attached the 513th Engineer Company (Dump Truck)(-) and the 584th Engineer Company (Light Equipment)(-) to the 20th Engineer Battalion (Combat) effective 15 January 1966. The 584th Engineer Company (LE) then had one platoon attached to the 62d Engineer Battalion (Const) at Phan Rang. This platoon was subsequently released to its parent unit on 30 March 1966. The 513th Engineer Company (DT) then had one platoon attached to the 937th Engineer Group at Qui Nhon; this detachment from the parent unit remains in effect.

(4) Unit Operations. During the first three weeks of the period (1 January - 22 January 1966) the battalion activities centered on staging in and transiting the Port of Cam Ranh, developing its initial (interim) cantonment area near Dong Ba Thin to Standard 2, receiving and deprocessing organizational impediments which had been separately deployed and actively initiating work on tasks assigned in Dong Ba Thin. The command (Advance Party) assumed operational control of the 584th and 513th Engineer Companies on 28 December 1965, directing the continuation of work initiated during the last quarter of CY 65 by Company C, 65th Engineer Battalion (Infantry Division) then at Dong Ba Thin. This work involved assumption of responsibilities for six outstanding design and construct directives, supporting construction of the Dong Ba Thin Military Complex (of which one was nearly complete and the remainder being not yet started or just initiated), and two equipment support and work directives supporting the 2d ROK Marine Brigade (of which both were nearly complete). During the major portion of the reporting period the entire organization was heavily committed to around-the-clock construction operations in the Dong Ba Thin Military Complex. Approximately 11% of the total troop effort and 6% of the equipment effort were committed to other tasks, which included preparation of bridge approaches (float bridge) at My Ca, construction for the ROK 2d Marine Brigade Headquarters, road maintenance (My Ca to Dong Ba Thin), engineer technical assistance to the ARVN Special Forces Training Center, and detailed route reconnaissance of QL-1 from Phan Rang to Ninh Hoa. Nine additional design and construct directives and three additional work directives were received during the period. Of the total projects assigned, five design and construction directives and five work directives became inactive by virtue of the specified work having been accomplished.

## 2. Significant Functional Activities.

a. Organization. The 20th Engineer Battalion (Cbt) is organized under TOE 5-35D with Change 1. The 513th Engineer Company (DT) is organized under TOE 5-124D with Change 4, while the 584th Engineer Company (LE) is organized under TOE 5-54D with Change 5. Several significant

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changes have been required in the existing structure to adequately support a construction mission. These changes have involved augmentations of various sections from existing assets as follows: augmentation of Battalion S-3 (to provide engineering and additional drafting and survey capability); augmentation of Battalion S-4 (to provide additional Class IV construction materials handling and control capability); and augmentation of Battalion Maintenance and unit motor sections (to provide a 24 hour unit and organizational maintenance capability).

## b. Personnel and Administration (Including Morale and Welfare).

The 20th Engineer Battalion (Cot) arrived in the Republic of Vietnam on 1 January 1966 at full officer strength, however, only 528 enlisted men, of an authorized 586, were assigned. The principal shortage was 24 radio operators (MOS 05E20) out of 27 authorized. USCGNARC had advised this battalion by message PER-MPD-EL 418739, dated 28 October 1965, that 27 EM, MOS 05E20, would be furnished after arrival in country, but to date this critical shortage still exists and continues to jeopardize any combat support missions assigned the organization.

Under the existing Department of the Army policy at the time of deployment, the battalion included as deployable those personnel with at least 60 days remaining to ETS as of departure from CONUS. Consequently, in the first 60 days after arrival, from 1 January 1966 to 1 March 1966, three officers and 46 enlisted men departed for CONUS and separation from service.

The assigned enlisted strength of this battalion as of 30 April 1966 was 511, a deficit of 75 below authorized enlisted strength. A more significant representation of the troop assets of the battalion is the present for duty strength. This strength figure takes into account those personnel who are effectively lost to mission commitment and includes intransit in and out, TDY, sick, leave, etc. Present for duty strength governs current mission capabilities of the battalion. Present for duty enlisted strength on 30 April 1966 was 494, or a deficit of 90 from the battalion authorized enlisted strength. Most of these shortages are in the lower grades (E-3 and E-4) and represent a considerable loss to the battalion construction capability. The impact of this shortage on operations has been made all the more severe by the necessity 1) to augment from existing assets, as indicated in paragraph 2.a. above, and 2) to provide intensive on-the-job training for various skills, particularly in the equipment/vehicle operator area to support 24 hour operations.

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It is significant to note that officer shortages have been accommodated from assets available to 35th Engineer Group (Const). No officer replacements have been received at organizational level originally designated for either the 20th Engineer Battalion (Cbt) or the 584th Engineer Company (LE) during the reporting period. Four such officers are now known to be assigned and expected by early June 1966.

Disciplinary problems of the command (including attached companies) have been minimal, involving, during the reporting period, only nine courts-martial, of which six were summary courts. This is of particular significance in view of the proximity to and transient nature of indigenous civilians and villages, the intense pressure of daily work, disagreeable weather conditions and field living conditions.

An active command troop information and orientation program has been implemented, involving initial and periodic reorientation of all personnel in the history, customs and nature of the Vietnamese; the nature and objectives of the present United States commitment; the chain of command and command relationships; the importance and nature of the engineer mission within USARV; the history, mission and policies of this organization; duty hours, uniform requirements, curfew limitations, passes and leaves, grievances and rules of conduct; organizational and personal security; and facilities and services available.

A significant administrative burden has existed during the reporting period and continues to exist. Five daily, 12 weekly, 24 monthly, 10 quarterly, one semi-annual and one annual reports are provided by this organization on a recurring basis as indicated. This has been compounded by continuing changes in reporting requirements as well as numerous demands for "one time" reports. The impact at the unit level has been pronounced and adverse as unit commanders are frequently diverted from close and continuing supervision of their respective missions.

The battalion has published 32 memoranda implementing regulations and directives of higher authority as well as local policy. Standard operating procedures for security control, safety, construction and maintenance have been published and an organization field standard operating procedure prepared in draft.

The units of the organization are participants in the Can Ranh Bay Central Post Fund and have each established unit fund councils.

Because of the heavy work load placed upon all personnel, it became difficult for each company to provide adequate barber services for its personnel. A battalion barber shop was established and two Vietnamese nationals were hired to staff it. In the hiring of the barbers and the operation of the shop, the requirements of AR 40-5 have

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been stringently enforced. The barbers are paid on a per haircut basis by the individual being serviced. Policies established in USARV Regulation 37-8 with regard to financial transactions with Vietnamese nationals are strictly adhered to. The service provided by these Vietnamese barbers has been excellent and has resulted in improved appearance of personnel.

In order to provide recreation and relaxation for personnel after duty hours, this battalion has established officer and NCO club facilities as annexes to the 10th Aviation Battalion Officers' and NCO Open Messes (Dong Ba Thin Military Complex). Company enlisted men's dayrooms have been established as part of the NCO annex. Although facilities are somewhat limited at this time, it is expected that continued improvement will be made in the future to provide more and better opportunities for installation recreational activity during off-duty hours.

On 20 February 1966 a movie account was established with the Army and Air Force Motion Picture Service, Pacific, Vietnam Regional Office. Movies are routinely shown in the battalion area five days a week. This has provided an excellent means for recreation during the evening hours and when initiated noticeably enhanced morale.

The Battalion Chaplain initiated a regular schedule of services for Catholic and Protestant faiths upon arrival in country. Under a chaplains exchange program with the 10th Aviation Battalion's Catholic Chaplain, religious services in both battalions have been adequately provided for both faiths. Religious coverage for members of the Jewish faith has been grossly inadequate due to the shortage of Jewish Chaplains in Vietnam. Services for Jewish personnel are held only once monthly in the Dong Ba Thin area.

The Battalion Chaplain makes a regular weekly visit to the 8th Field Hospital in Nha Trang and the Air Force Hospital at Can Ranh Air Base to visit hospitalized personnel of the battalion.

The battalion chapel, which is located in a medium general purpose tent, is being steadily improved to provide the proper atmosphere for the conduct of religious services. Although lacking a qualified organist, the chaplain has obtained a tape recorder and religious music tapes which have proven to be quite satisfactory.

The morale of the battalion upon arrival in Vietnam was amazingly high. The men were enthusiastically looking forward to their new work and during the first four months have quantitatively and

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qualitatively exceeded expected capabilities. The considerable attention devoted to personal problems by commanders, the Battalion Chaplain and Medical Officer have done much to reduce the impact and tendency to magnify personal problems resulting from family separations.

## c. Intelligence and Security.

The combat intelligence requirements for the battalion have been negligible while engaged in construction activities. The battalion has been located in a relatively secure area and has been divorced from the normal combat intelligence activities required of an Engineer Combat Battalion. Nevertheless an active intelligence program has been maintained.

The battalion has developed an intelligence collection plan, suited to its needs and circumstances. Emphasis has been placed on identification of native construction materials, particularly rock, lateritic materials and coral. Considerable reconnaissance effort has been devoted to location of potential sources of fresh water in the immediate vicinity.

Detailed route reconnaissance missions which have been assigned to the battalion have routinely included engineering construction effort estimates, as well as substantial security in the execution. As a result, such missions have been regularly tasked to combat companies of the battalion. This is discussed further in 2.d. below.

Enemy intelligence is obtained on a weekly basis by two principal means, the first the USARV Weekly Intelligence Summary and the second, a weekly meeting of intelligence representatives of units and agencies of the City of Cam Ranh. The latter is a multi-national combined effort involving Vietnamese Army, Special Sector, National Police, city, US Army and Air Force, and ROK Marine intelligence personnel. Sightings, incidents, indicators and reports pertinent to the local area (City of Cam Ranh and adjacent areas of the II Corps Tactical Zone) are reviewed in detail. Conflicting information is reviewed in an attempt to refine the intelligence product. The battalion maintains continuing liaison with intelligence officers and collection activities of adjacent units, the 10th Aviation Battalion and B/51 Special Forces Detachment located at Dong Ba Thin, in an effort to keep abreast of the enemy situation on a day to day basis.

Intelligence reports of all types pertaining to the II Corps Tactical Zone (VN) have been extracted and collated in one location for ease of reference and ready review.

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The organization has been unable to obtain soils trafficability map coverage of the immediate area. As a consequence, through survey material and local reconnaissance, a soils trafficability map has been developed for the area of interest by the battalion.

Detachment 18, 30th Weather Squadron (USAF) at Cam Ranh Air Base has been an excellent source of weather information. Liaison was established early with this unit for 24 hour, monthly forecasts and severe weather warnings. All weather information is routinely distributed to units of the battalion to assist in planning for construction activities.

Alert, defense and physical security plans have been developed and tested, at least monthly, by the battalion. At the close of the period, three companies of the battalion and its attached units had displaced from interim cantonment locations to the Engineer Base Camp, a permanent cantonment of the Dong Ba Thin Military Complex. This has complicated interior guard and alert requirements temporarily, however upon completion of the movement of all companies to the permanent area, a fully integrated physical security plan, including assignments of sector defense and provisions for warnings, will be implemented in coordination with the 10th Aviation Battalion and ARVN Special Forces Training Center, as part of the installation (Dong Ba Thin Military Complex).

## d. Operations and Training.

The Advance Party of the 20th Engineer Battalion (Cbt) arrived in Vietnam on 18 December 1965, reporting to its parent headquarters, Headquarters, 35th Engineer Group (Const) at Cam Ranh Bay, on 20 December 1965. The 87th Engineer Battalion (Const) was designated host battalion and assisted both the Advance Party and the Main Body of the 20th Engineer Battalion in staging in and transiting the Cam Ranh Bay area. The Advance Party established initial liaison with supporting activities of the then Cam Ranh Bay Logistics Area and the Nha Trang Support Command, located and prepared an interim cantonment area near the Dong Ba Thin Military Complex and prepared a staging area near the Port of Cam Ranh to initially hold units of the battalion for a phased displacement to their cantonment location.

The Main Body of the battalion arrived at Cam Ranh Bay and off loaded on 1 January 1966, participating, on debarkation with the 39th Engineer Battalion (Cbt) in a ceremony during which the battalion colors were joined with others of the 35th Engineer Group (Const)

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Company A moved directly to the interim cantonment and established security of the area; Headquarters and Headquarters Company, Companies B and C located in the initial staging area. The units of the battalion which staged at Cam Ranh Bay, moved in phases to the interim cantonment area between 2 and 14 January 1966. Company C, the last company to close in the battalion cantonment, received on-the-job training, while staging, with the 87th Engineer Battalion (Const) on construction projects typical of those directed at Dong Ba Thin. This unit also was assigned the mission of assisting and supporting unloading, deprocessing and movement of organizational impedimenta as it arrived in Cam Ranh Bay.

On 14 January 1966 the USS Robinson docked at the Port of Cam Ranh. Unloading and delivery of all supplies and equipment to the cantonment area from this ship was completed on 17 January 1966. The battalion was reported fully operational on 22 January 1966 following arrival and off-loading of the MSTS Morgantown Victory carrying the remainder of the battalion's organic equipment.

The objectives of operations during the early weeks of the period were two-fold: 1) the preparation of the battalion to live in the field, secure itself and use its equipment; and 2) the continuation of construction missions previously assigned to Company C, 65th Engineer Battalion (Inf Div), in the Dong Ba Thin area. The following activities characterized operations supporting the first objective: establishment of cantonment perimeter security, including defensive wire, automatic weapons bunkers, individual defensive positions and fields of fire; preparation of cantonment shelters, minimum sanitary facilities, a motor maintenance area, area roads and an area drainage system; function firing of all organic weapons; and the displacement, deprocessing and technical inspection of equipment prior to mission assignment. Operations supporting the second objective included reconnaissance and task familiarization by key officer and NCO personnel for missions assigned the units; direction and supervision of equipment support, already available in the 584th Engineer Company (LE) and 513th Engineer Company (DT), to provide uninterrupted engineer effort on construction previously undertaken by C/65th Engineer Battalion (Inf Div); liaison with supporting logistics activities, adjacent units, the Installation (Dong Ba Thin Military Area) Coordinator, and local civilian officials; on-the-job training for vehicle drivers and equipment operators, whose equipment had yet to arrive, with the attached engineer companies. Three work directives were received during this time requiring rapid response on the part of the organization: construction of the bridge approaches for an M476 float bridge erected as a Group effort, at My Ca; provision of engineer technical assistance to the B/51 Special Forces Detachment, involving a reconnaissance and preparation of estimates for special forces training facilities; and road maintenance on the road from QL-1 to the My Ca Bridge.

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The major effort of the battalion and its attached companies, as well as its primary mission, has been and continues to be construction of the Dong Ba Thin Military Complex. This complex (see Inclosure 2) is located in the center of an area (approximately 50 square kilometers) identified as the Dong Ba Thin Permanent Military Area. The area to be developed (the complex) is sited on an alluvial flood plain, stretching from the mountains on the West to Cam Ranh Bay on the East, with a generally constant natural slope of 0.3%. The plain is covered by a secondary rain forest. The complex lies astride the natural water course of a 12,500 acre watershed. The area is inundated much of the seasonal monsoon (October - December) by sheet flow to the bay. All construction at grade, vertical or horizontal, must be placed on fill. Thus, the fundamental engineering tasks confronting the battalion on its arrival in the area were a massive earthmoving and fill stabilization effort, just to "get out of the mud" and the development of a comprehensive drainage plan, which initially could provide adequate drainage for construction completed prior to the 1966 monsoon.

An outline sketch of the complex based on current development plans is at Inclosure 3. On 1 January 1966, the 3,000 foot runway had been completed to the point where it was usable; the basic fill for the 10th Aviation Battalion Headquarters area had been completed, and basic fill for several of the roads in the 1600 Man Cantonment area had been placed. The land throughout, excepting the above areas, was completely flooded, including the ARVN Special Forces Training Center (not a part of construction). Two aviation airmobile companies, the 10th Aviation Battalion Headquarters and the 335th Transportation Company (DS) were crowded into temporary shelters along the eastern edge and northern overrun of the runway. None of the area, except for the eastern most portion of the 1600 Man Cantonment area had been cleared.

The only source of borrow material available was the coarse angular sand found north and south of the complex adjacent to the bay. The only proximate and secure source of stabilizing material was a hill of lateritic material located at the edge of the bay opposite My Ca, approximately three miles from the complex.

No topographic survey (horizontal and vertical control) for the area was available and no data concerning sea level datum or elevations at grade to be obtained existed. The only valid information available indicated that the runway had been above water during the 1965 monsoon and was active. As a result, "mean high water" (Cam Ranh Bay) was established as the heavy wash line evident along the western beach following the monsoon. Runway elevation was determined to be 6.51 feet above this datum. Consequently crown elevations for construction at grade were fixed for subsequent construction at 6.5 feet above the mean high water datum.

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Immediate efforts were placed on initiation of fill operations (estimated then at 1,500,000 cubic yards of loose measure sand borrow), an area topographic survey, and the development of a drainage plan.

The following construction in the area was then, and subsequently during the period, directed: completion of the 3,000 foot PEP (M3) runway, including shoulders, drainage and overruns; construction of the 1600 Man Cantonment to Standard 4, as materials became available; construction of a UH-1 heliport (75 each); construction of a CV-2 parking apron (18 each); construction of a CH-47 parking area (18 each); construction of hangar facilities (4 each) in the transient parking area and direct support maintenance area; construction of one warehouse for the direct support maintenance area; construction of a 200,000 square foot depot (involving 11 major structures); construction of two motor repair shops for the aviation battalion headquarters; construction of two administration buildings for the aviation battalion headquarters; construction of a 500 foot airfield extension and a 3,000 foot parallel taxiway with laterals to the runway; and a 900 Man cantonment area to Standard 3 (to serve as an engineer base camp).

A number of factors complicated planning and construction effort during much of the period. The natural land surface was not sufficiently stable to support engineer equipment until mid-February; units at Dong Ba Thin on 1 January 1966 had to be phased into the 1600 man area as quickly as possible, both to clear the way for construction east of the runway as well as make room for an inbound CV-2 company; the CV-2 apron had to be completed for beneficial occupancy by 17 February 1966 to receive the aircraft of the CV-2 company arriving at that time; and no information was available as to the dimensions or structural detail of the larger building structures, other than that they were to be prefabricated and available at some future date.

Initial priorities involved the commitment of the entire earthmoving effort to fill operations in both the CV-2 and 1600 man cantonment areas on a 24 hour basis, in order to achieve maximum production. A borrow pit was opened north of the complex along the bay, and later to the south of the complex at the bay as access and construction roads could be developed. Stockpiling and hauling from both pits were alternated to keep up with the demands of the fill operation.

That the massive fill requirements at Dong Ba Thin far exceeded the capabilities of organizational equipment to accomplish in a rational time frame, was evident at the outset. This led to early and aggressive efforts to seek relief from this major limiting factor. Specifically, TOE equipment shortages which had persisted in the 584th Engineer Company (LE) since arrival in country (May 1965) were followed

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up by new supply actions, added equipment support was consistently requested from Group assets, and requests for equipment in excess of authorized allowances were submitted. The supply action, initiated in February, had by the close of the period yielded negligible results. The major attack on the problem was the presentation of a study on 9 February 1966, requesting dredge support (hydraulic fill operations) to meet the major portion of the Dong Ba Thin fill requirements. Favorable consideration has been given the request and utilization of a dredge, commencing in May 1966, has been programmed.

Survey support to augment limited existing capabilities of a combat battalion was quickly sought and obtained. The battalion has continually been supported by a team from the 35th Engineer Group (Const). This support has been utilized for almost all the siting, grading and drainage effort. Additionally, a detachment of the 509th Topographic Company was attached for purposes of providing a complete area topographic survey. The complex real estate boundary was surveyed and concrete reference markers placed along the perimeter. The area topographic survey provided for the extension of both horizontal and vertical control throughout the area.

Early clearing efforts were badly hampered by the inability to use engineer equipment on the existing surface. Daily utilization of from 200 to 400 unskilled indigenous laborers assisted considerably in basic clearance and burning.

During the months of February through April, fill operations continued with horizontal and vertical construction being initiated as soon as areas were filled and brought to grade.

To provide stabilization material for the numerous hardstands, roads and taxiways, a laterite pit in the vicinity of the My Ca bridge was developed in early February. A "chinaman" loading ramp was constructed to permit two-face loading operations and to release critical loading equipment to other operations. The raw laterite obtained from the pit was mixed with large rocks and boulders thereby presenting major difficulties in final grade operations when placed. During early March a 75 ton per hour rock crusher was installed at the laterite pit which alleviated the problems previously encountered by the large rock. The crusher operation was accomplished by the quarry section of the 572d Light Equipment Company (under operational control of another organization).

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During the period a number of significant design projects were submitted and subsequently approved. An intermediate interceptor and internal drainage system, the CV-2 parking apron, UB-1 heliport, Engineer Base Camp, and the CH-47 parking apron.

The drainage concept submitted in the design provided for 1) a major drainage structure which could be developed in proximity to currently programmed construction to intercept the extensive sheet flow of the monsoon and divert it to the bay, and 2) an internal system to rapidly move runoff from the complex to the interceptor system and thence to the bay. The interceptor system provides for a 100 foot ditch, four feet deep, circumscribing the complex with earth berm, designed to move an anticipated 2,800 cubic feet per second of water volume flow. The system is regarded as intermediate and interim, as its purpose is to provide protection to the complex during the 1966 monsoon. A similar structure at a greater radius from the complex center would replace it during future development. Bridge designs consistent with the interceptor system, to permit passing the water across National Highway QL-1, have been submitted.

Approval of the 900 man centerment (Engineer Base Camp) siting and design permitted construction operations to be initiated early in the period. Subsequent construction permitted by 30 April, the displacement of three units of the organization from their interim locations to the Dong Ba Thin Military Complex: 584th Engineer Company (LE), 513th Engineer Company (BT) and Headquarters and Headquarters Company, 20th Engineer Battalion (CBT). It is significant to note, that although directed construction, much of the effort in the Engineer Base Camp was applied by personnel working over and above their normal duty shift day (10 hours).

The battalion opened and operated a sanitary fill during the period for units of the immediate area, sharing custodial responsibility with the 10th Aviation Battalion. No such facility was in use on arrival of this organization at Dong Ba Thin.

Additional missions were tasked to the battalion throughout the quarter. During the period February through April detailed route reconnaissance were performed on National Highway QL-1 from Phan Rang to Ninh Hoa (143 miles) and Highway HL-1 (12 miles). This effort involved classifying 125 bridges. A formal report, along with work estimates to improve the roads and bridges to a Class 50 two-way all-weather system along the entire route, as well as photographs of all bridges, was submitted to 18th Engineer Brigade. These reconnaissance were fully coordinated with Headquarters, I FFORCEV, and involved provisions for security. The HL-1 reconnaissance was performed entirely by foot.

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A ROK Armed Forces Radio Station, including antenna, has been constructed; completion awaits only receipt of critical construction materials, unavailable since February. Six quonset administrative buildings were constructed for the Headquarters, 2d ROK Marine Brigade. Emergency maintenance has been performed periodically for QL-1, from My Ca to Nha Trang, routinely maintained by the GVN. A crusher headwall was constructed and equipment support provided crusher operations of the 572d Engineer Company (LE) at the laterite pit.

Training activities have been oriented toward five distinct objectives identified as follows: command information (to better acquaint the individual soldier with his mission, environment and responsibilities), combat readiness training (to maintain the "feel" and operation of the individual and/or crew served weapon), care and cleaning of individual and organizational equipment, and on-the-job training in virtually all skills (to support personnel shortages as well as meet the requirements of the construction mission). Fifteen hours every six weeks are accorded the first four training activities; on-the-job training is undertaken as a continuing process in the course of accomplishing the mission.

## e. Logistics.

(1) Labor. During the early stages of construction, 200 to 400 Vietnamese laborers (of approximately 600 employed by the 10th Aviation Battalion) were utilized under battalion supervision to conduct clearing operations over the entire complex. Due to the saturated soil conditions as a result of the monsoon, clearing operations were initially impossible and subsequently slow and difficult with equipment. The Vietnamese laborers, although slow in nature, accomplished a considerable amount of the required clearing of brush and smaller trees with machete and home made knives. Skilled indigenous labor is in critical supply, particularly in the City of Cam Ranh (west), however space authorization has been requested of USARV to support the increasing demands of vertical construction and maintenance.

(2) Maintenance. Maintenance requirements placed a heavy burden on the resources of the battalion throughout the period. Operation of equipment on a 24 hour basis has required continuing stress on a sound maintenance program. Motor stables on all vehicles and equipment are performed twice daily, each for one hour, prior to the start of the day and night shifts. Contact maintenance teams are available and utilized on each shift for project site maintenance. Close supervision has been required by all levels of command to combat the high deadline rate

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associated with 24 hour operation in mud, sand and adverse weather. Command maintenance inspections, as well as the use of a "roadside" inspection team has resulted in considerably improved first echelon maintenance.

Initial direct support for maintenance and repair parts for ordnance automotive equipment was provided by the 19th Ordnance Company (DC) in Nha Trang. This proved to be both cumbersome and inadequate, due in part to the distance involved (25 miles each way) and the limited capabilities of the 19th Ordnance Company to provide the necessary support. Ordnance vehicles, particularly the 5 ton dump truck, critical to fill operations, were being held at the 19th Ordnance Company for periods up to 60 days for repair. During the last week of February, Ordnance and Engineer maintenance support was transferred from Nha Trang to the US Army Depot, Cam Ranh Bay, resulting in more efficient support because of shorter lines of evacuation and replacement.

Repair parts supply has been a major problem since the battalion arrived in Vietnam. Although 87.6% of the battalion PLL was at 100% fill upon deployment, the experience data required for new equipment had not been established. As a result vehicles and equipment have been deadlined in excess of 30 days awaiting receipt of "fringe" type repair parts and high demand GHI parts beyond one PLL. Although the RED BALL express system was initiated to avoid excessive down time and has helped, numerous delays are still being experienced. Average time for receipt of parts placed on RED BALL requisition has been 20 to 30 days. Recent authority to stock two PLL's should help reduce the period of time the equipment is down for parts in the long term.

The average deadline rate experienced by this battalion since arrival in Vietnam has been 20% for ordnance-automotive and engineer equipment and 15% for signal equipment.

(3) Supply. The construction mission assigned the battalion following its arrival in Vietnam, necessitated a realignment of supply personnel resources within the battalion. The C-4 section was augmented with company supply sergeants and other details, as required, to handle the tasks of administration, transportation, storage and issue of construction materials required for the Dong Ba Thin projects. This task was at first monumental and required day and night operations to keep the supplies and materials moving in order to set up the battalion cantonment area and commence construction operations. During the period January through April 1966, 2,300 tons of supplies and materials were hauled by organizational transportation.

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The initial supply source for all classes of supply was located in Nha Trang, about 25 miles from Dong Ba Thin, over poorly maintained roads. A request was made to 35th Engineer Group (Const) during the latter part of January 1966 to transfer logistical support from the Nha Trang Support Command to the Cam Ranh Bay Logistics Area (11 miles away over improved roads). After repeated follow-up requests were made, a transfer was finally effected to the US Army Depot, Cam Ranh Bay on 23 February 1966 for Class I, II, IV and V supplies. Class III supplies were locally obtained from the Class III distribution point existing at Dong Ba Thin. This shortening of the supply line has reduced travel time and has considerably reduced the wear and tear on organic supply vehicles.

The three 5-ton dump trucks TOW to the S-4 section were not appropriate for hauling the huge quantities of supplies and materials required for the battalion and construction projects. Consequently, they were hand-receipted to the line companies for fill operations and the 2 1/2 ton cargo trucks of the S-1, S-3 and Communications Sections were moved to the S-4. In addition, the truck tractors, 5 ton with 25 ton trailers, organic to the line companies were frequently utilized for hauling construction materials. This arrangement allowed for more effective use of organic transportation.

During the period 21 January 1966 through 20 February 1966, emergency support was rendered to the 63d Quartermaster Water Point at Dong Ba Thin. Although not assigned a water supply mission, the battalion used two of its organic 1,500 gallon per hour water purification sets to provide potable water to over 2,000 troops in the Dong Ba Thin area. This support was initiated when the installation's water purification set, 3,000 gallon per hour, was deadlined and had to be replaced with an entirely new unit. On 28 February 1966, this emergency support was terminated after production of 400,000 gallons of water. During this same period numerous reconnaissance were made throughout the Dong Ba Thin area in attempts to locate additional potable water sources. Water was fast becoming short in supply and additional sources had to be located to provide water during the coming summer. All attempts to locate existing water sources and to develop shallow wells have been unsuccessful.

During the reporting period, the following quantities of major Class IV materials were placed on requisition in support of directed construction projects:

Cement: 5,700 bags  
Lumber: 172,281 board feet  
FSP: 1,845 bundles  
Nails: 5,855 pounds  
Tarp: 509 rolls

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Personnel: 11 each  
Ammunition: 500 rounds  
Culvert, C.I.: 1,000 linear feet  
Wire, 14 gauge: 10,000 feet

(4) Services. Initially, upon arrival in the Dong Ha Thin area on 5 January 1966, the Battalion's laundry needs were served by the 14th Quartermaster Company. However, on 3 February 1966 due to higher priorities of combat units the 14th Quartermaster Company was moved to another area. On 26 February 1966, an organizational laundry contract service was provided through the 1st Air Force Support Command. This contract provided for the cleaning of organizational type clothing and equipment only. The facility was thus available to provide laundry service for individual clothing. Available Vietnamese laundry facilities within reasonable distance of the installation were not sufficient to handle the workload and the price to the individual was as a result prohibitive. A laundry point facility was established outside and adjacent to the Battalion encampment area. With the unanimous consent of all personnel, it was agreed that the installation would hire a number of Vietnamese nationals to operate this laundry facility. These people are paid by the monthly voluntary contributions of personnel. The cost per bar is still well below that paid if the individual had his clothing washed on the open market. Vietnamese laundry girls were hired on 2 March 1966. Each was processed through military and civilian channels for security clearances and medically examined by the Battalion Surgeon. To date this facility has worked out well, providing timely and good quality laundry service at minimum cost.

(5) Medical. Medical service, consisting of routine outpatient and emergency care, is provided by the Battalion Medical Section. This section also administers immunizations and cares for patients on quarters status. Personnel reporting has progressively increased from a low of 212 patients seen in January to 512 in April for a total of 1,408 patients. This increase can be attributed somewhat to the constant increase in high temperatures, increased exposure to construction hazards, i.e. lifting and loading heavy materials, and the increased exposure to venereal disease in civilian communities. Immunizations given to the Battalion and attached companies has totalled 2,733 over the four month period.

Routine and emergency dental service is provided by the FJ Team located in the 10th Aviation Battalion Dispensary at Dong Ha Thin; prosthetic care is provided by the FJ Team at the 3rd Dental Clinic. Optical and orthopedic support is provided by the 31st Medical Depot, Nha Trang Support Command.

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Patients requiring evaluation are sent to the Cam Ranh Air Base Hospital or the 8th Field Hospital, Nha Trang.

Stringent sanitary conditions have been enforced since arrival in Vietnam, with the result that an extremely low number of personnel have suffered diseases normally attributed to poor sanitation. Field sanitation teams are established in each subordinate unit to support a continuing preventative medicine program. Periodic inspections by the Battalion Surgeon have been conducted to insure the necessary field sanitation standards have been met.

f. Communications. The communications capability of the battalion when it deployed was, at best, a poor satisfactory. In addition to being short 24 radio operators out of 27 authorized, the radio communications equipment was of the old series and, having been in use for a number of years, barely met deployability criteria. To offset the shortage of radio operators, pre-deployment classes in radio operation were conducted for selected personnel; radio-telephone procedure classes were also conducted for these personnel on board the USS Weigel while enroute to Vietnam. The latter training also included an introduction to C.W.

Upon arrival in Vietnam and initiation of construction projects, radio nets were established between all units, company work sites and the battalion net control station. Use of the radio, including emphasis on authentication and brevity codes, has provided invaluable training and has also assisted, to a great extent, in the command control of the battalion cantonment. Continuous radio contact is maintained between key security bunkers and the Battalion Command Post to insure instantaneous communications for positive command and control in the event of a threat, incident or attack.

Difficulties have been encountered in receiving adequate maintenance support from the direct support facility in Nha Trang Support Command. Although maintenance support was transferred to Cam Ranh Bay (US Army Depot, Cam Ranh Bay) during the last week of February 1966, two work orders for the repair of radios were still outstanding at Nha Trang as of 30 April 1966. Maintenance support from the 128th Signal Company in Cam Ranh Bay has been considerably improved over that received from Nha Trang, although the frequency of repairs required has increased due to constant use of the radios and the age of the sets.

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## g. Installation.

Dong Ba Thin Permanent Military Area is a sub-installation of Nha Trang, installation support being provided by the Nha Trang Support Command. The Commanding Officer, 10th Aviation Battalion, principal tenants at Dong Ba Thin, has been designated Installation Coordinator. The Dong Ba Thin sub-installation has immediate installation responsibilities relating to the development, water supply, POL supply, installation security and limited repair and utilities support. This battalion closely coordinates with the Installation Coordinator on matters relating to its tenancy as well as in matters pertaining to construction.

Monthly meetings are held for principal commanders of units and agencies located in the City of Cam Ranh, with the Mayor. Here also, matters bearing on local and installation security, enemy intelligence, traffic control, civic action, community relations, medical problems and labor are reviewed and common courses of action to the benefit of all are determined. The battalion as a unit and as a tenant at Dong Ba Thin actively participates in and supports actions resulting from these meetings.

h. Civic Action. The 20th Engineer Battalion (Cbt) Civic Action Program was initiated on 28 January 1966 with the publishing of orders appointing a Civic Action Committee and a Civic Action Officer. Immediately thereafter, the committee investigated possible locations in which to concentrate the organization's civic action efforts. The committee conferred with the Mayor of the City of Cam Ranh, US Military Advisors to the Mayor of Cam Ranh, USAID officials, as well as the Village Chief of Cam Phuc and the Hamlet Chief of Tan Thanh. These preliminary efforts were expended in order to select an appropriate area for the battalion's civic action effort in close proximity to the location of the battalion. Such a location would minimize security risks to personnel, reduce equipment and transportation problems, and increase time and resources which could be applied to civic actions projects.

Medical and surgical out-patient care has been provided for the population of Ba Ngoi on a once-a-week basis by the Battalion Medical Section. This medical care at Ba Ngoi was initiated on 4 February 1966. Since its inception approximately 428 patients have been examined and treated. Arrangements have been made to evacuate those personnel requiring hospitalization to the provincial hospital in Nha Trang. On 16 February 1966 a MEDCAP program was initiated in the Hamlet of Tan Thanh on a once-a-week basis. Prophylactic anti-biotics have been administered to approximately 295 persons to reduce the incidence of communicable disease in the

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local area. The MEDCAP program in Tan Thanh has been temporarily discontinued because of lack of supplies. A request for approval of a MEDCAP program was forwarded to higher headquarters on 19 February 1966. No reply had been received as of 30 April 1966, although continuous follow-up action has been taken. The citizens of Ba Ngoi and Tan Thanh were provided medical care they would not otherwise receive, thereby improving the health and welfare of these communities and fostering better relations between the people of Vietnam and US Military Forces.

On 21 February 1966 the battalion published a Military Civic Action Plan (see Inclosure 4), which outlines the duties, responsibilities and procedures to be utilized in providing civic action support to the Hamlet of Tan Thanh. The plan provides guidance for projects which center around the health and welfare, construction, commerce and industry and/or agriculture and natural resources. This plan provides systematic guidance to Task Force Commanders as they plan, develop and execute approved civic action projects.

At the request of the Mayor of the city of Cam Ranh, the battalion began to clear a refugee area approximately 400 x 500 meters located about one mile north of Tan Thanh on 7 March 1966. This project was completed on 16 March 1966. Four-hundred-sixty man and 140 equipment hours (dozer) were expended in completing this project. This area will provide a housing site for approximately 100 displaced families.

On 12 March 1966 the Battalion Civic Action Committee received approval from the Mayor of the city of Cam Ranh to undertake the following civic action projects in the Hamlet of Tan Thanh:

- Construction of a 60 pupil school house with adjacent playground
- Construction of a medical dispensary
- Removal of tree stumps from tillable land
- Institution of a program of proper trash and garbage disposal

Further study will be made to consider the feasibility of constructing an earth dam for a water reservoir with future expansion to include an irrigation system for agricultural advancement, and constructing a road through the hamlet to the beach area from Route QL-1

As of 20 April 1966 work had begun on several of these projects. It is worthy of note, that the local citizenry have begun to participate in this effort with personnel of the battalion.

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## 4. Statement of General Progress:

a. Directed Effort. During the period 1 January to 30 April 1966, the battalion was assigned and has undertaken work on 21 work or construction projects directed by Headquarters, 35th Engineer Group (Const). Eleven projects have been completed at the location and for the using agency shown (where applicable):

- (1) Airfield (3,000', MS PSP)  
Dong Ba Thin Military Complex  
10th Aviation Battalion
- (2) UH-1 Helipad (75 20' x 20' concrete helipads)  
Dong Ba Thin Military Complex  
10th Aviation Battalion
- (3) CV-2 Parking Apron (1,200' x 400', MS PSP)  
Dong Ba Thin Military Complex  
10th Aviation Battalion
- (4) ROK 2d Marine Brigade Hqs (6 each 20' x 48' std quonsets)  
Dong Ba Thin vicinity  
ROK 2d Marine Brigade
- (5) Administrative Buildings (2 each 20' x 48' tropicalized quonsets)  
Dong Ba Thin Military Complex  
10th Aviation Battalion
- (6) Third Country Troop Support (equipment and carpentry support)  
Dong Ba Thin vicinity  
ROK 2d Marine Brigade
- (7) ROK Heavy Equipment Support (earthmoving and drainage)  
Dong Ba Thin vicinity  
ROK 2d Marine Brigade
- (8) My Ca Float Bridge Approaches  
My Ca  
553d Engineer Company (FB)
- (9) Engineer technical Assistance (training facilities)  
Dong Ba Thin - Hoa Do area  
B/51st Special Forces Detachment, 5th Special Forces Group

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Ending 30 April 1966, Reports Control Symbol CSGPC-28(R1)

(10) Route Reconnaissance (Routes QL-1 and QL-1)  
Phan Rang to Ninh Hoa

(11) Crusher Headwall  
My Ca (West)  
572d Engineer Company (LE)

Considerable additional effort has been expended in the Dong Ba Thin Military Complex bringing the remaining projects to various stages of completion. The more important of these are provision of Standard 3 accommodations for two airmobile companies and a transportation direct support maintenance company (1600 man cantonment), completion of a 40,000 square foot M6 PSP hardstand for the direct support maintenance company, effective completion (excludes adjacent dressing and drainage) of a 3,000 foot M8 PSP parallel taxiway with connecting laterals and warmup aprons, provision of Standard 3 accommodations for three engineer companies (900 man cantonment), and completion of land clearance for all remaining construction currently programmed.

b. Battalion Projects. Numerous battalion directed projects have been undertaken in support of directed construction. The most important of these include borrow pit and laterite pit operations, operated on a continuing basis to provide fill and stabilizing material. Additionally, work on the intermediate interceptor drainage system for the Dong Ba Thin Military Complex has been undertaken as a battalion project; the system has been completely roughed in on the west and north sides of the complex.

c. Recapitulation of Effort. Construction effort, by project, is summarized for the period 1 January 1966 through 30 April 1966 on Inclosure 5. A graphic visualization of the status of construction in the Dong Ba Thin Military Complex is shown on Inclosure 3.

#### Section II. Commander's Recommendations:

##### 1. POM and Deployment.

a. Discussion. During the pre-deployment phase of a non-emergency deployment, training time is extremely valuable. Normally this training must be carefully programmed and oriented to accommodate all other preparatory actions required in the POM as well as the late receipt of filler personnel in critical MOS's. In the absence of special guidance, emphasis during the available training time will be directed toward readiness of the unit and individual to perform the TOE mission. Such was the case of the 20th Engineer Battalion (Cbt).

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b. Recommendation. Where an organization is to be committed, following its deployment, to a mission which differs materially from that for which it is organized, equipped and trained, earliest and official indication of such a requirement is recommended, in order that pre-deployment training may be properly modified and directed.

## 2. Employment.

a. Discussion. Although the 20th Engineer Battalion (Gbt) was augmented by the attachment of an engineer light equipment company and a dump truck platoon, severe deficiencies in equipment and organization became apparent when committed, in the main, to a construction mission.

(1) The following equipment, not available to the organization as augmented, has been required to support the mission:

- (a) Generator, 10 KW (four available by FOX used in water purification pots)
- (b) Reproduction set, moisture process
- (c) Shop equipment, woodworking, trailer mounted
- (d) Shop, general purpose repair, trailer mounted
- (e) Test set, soil
- (f) Vibrator, concrete
- (g) Saw set, DeWalt (or equivalent), trailer mounted
- (h) Lift, cross country, RZL, 6,000 pound capacity
- (i) Tractor, full tracked, with ripper

(2) The following equipment, one or more of which are found in the organization as augmented, has been consistently required in greater numbers to adequately support the mission:

- (a) Tractor, 83CM (or equivalent) with 18 CY scraper
- (b) Loader, scoop, 2 1/2 CY
- (c) Water distributor, 1,000 gallon
- (d) Mixer, concrete, 16S

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- (e) Survey set, general purpose
- (f) Shop, contact maintenance, truck mounted
- (g) Lubricating and servicing unit, truck mounted
- (h) Roller, 3 wheel, 5/10 ton, steel, motorized (or equivalent)
- (i) Welding shop, truck mounted
- (j) Truck, 5-ton dump

(3) The following functional areas of the battalion organization have required additional personnel to provide a capability or augment existing capabilities as indicated:

- (a) S-3: construction engineering, drafting, survey.
- (b) Battalion Maintenance: engineer equipment and wheeled vehicle maintenance.
- (c) S-4: materials handling, utilities construction support.

b. Recommendation. In order to enhance the flexibility of engineer combat battalions so that they may be efficiently employed as Category II units in a construction role, it is recommended that the concept of standard construction augmentation packages (selected personnel and equipment to augment combat battalions) be studied, developed for test and field tested for possible use in a theater of operations.

### 2. Lessons Learned.

#### a. POM and Deployment.

- (1) Item. Late receipt of replacements.

Discussion. During the last phases of POM, many personnel reported to the organization as fillers who were either not POR qualified or had non-engineer MOS's.

Observation. A training program must be established early in the organization POM to provide necessary last minute training in POR subjects for late arrivals. Personnel with non-engineer MOS's must be assigned on a highly selective basis to make maximum use of their aptitudes or past training and assure earliest effective on-the-job training subsequent to deployment.

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(2) Item. Prescribed Load List (PLL).

Discussion. During PCM prescribed load lists for newly received equipment were revised and requisitions submitted as early as possible. Late receipt of new type equipment necessitated submitting PCM requisitions just prior to deployment. Few of the items requested on PCM requisitions have been received since arrival in Vietnam.

Observation. Units must be informed early during PCM of new items of equipment which will be received just prior to deployment, together with adequate reference material upon which to revise PLL's, in order that supply actions involving PCM requisitions may be avoided.

(3) Item. PCM Schedule and Checklist.

Discussion. Many commissioned and non-commissioned officers have never participated in a unit deployment overseas or been exposed to strategic mobility exercises.

Observation. Carefully prepared PCM schedules, together with functional checklists for responsible staff officers and unit commanders, can assist in avoiding last time, costly mistakes and duplication of effort.

## b. Deployment.

(1) Item. Refrigeration.

Discussion. The use of perishable medical supplies, as well as perishable rations, establish a necessary requirement for refrigerated storage for forces in Vietnam. The significant morale benefits derived from being able to provide cold liquids to drink, at least once a day in such an environment, additionally support the requirement for refrigeration.

Observation. Refrigerated storage (24 cu ft and greater) as well as power sources for such storage are normally installation property and not immediately available to deployed units. Provision of some refrigerated storage (other than NAF) with generator units might well be designated discretionary WABTOC items for organizations deploying to Vietnam.

(2) Item. Aircraft parking aprons.

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Ending 30 April 1966, Reports Control Symbol C2GPO-28(R1)

Discussion. The use of PEP parking pads for CV-2, smaller fixed wing aircraft and helicopters, when significant earthwork (fill and stabilization) precedes the placement of pads, have proven to be wasteful of valuable equipment hours. The foregoing is true because of the complex drainage pattern inevitably established and the corresponding awkward employment of grading and compaction equipment.

Observation. Although more expensive in terms of PEP and manhours, the mass parking apron (generally placed at constant slope) is far more easily prepared for PEP, more durable, and of considerably greater value to the user for access, maintenance, and aircraft movement.

(3) Item. Materials Handling Equipment (MHE).

Discussion. The constructing organization or unit must inevitably double handle large quantities of construction materials when located some distance from Class IV supply sources. This is particularly true when large quantities of bulky and heavy supplies are rapidly consumed, e.g. cement and PEP. Additionally, good project management normally provides for availability and uninterrupted supply to the project site where these materials are required.

Observation. The problems relating to handling, movement and storage are vastly simplified by MHE, saving considerable in inefficient manhours (rigging and stacking) and equipment hours (crane and front loader). Medium capacity lifts should be organic to engineer battalions (construction and combat) for handling of Class IV materials.

(4) Item. Placing M3 PEP.

Discussion. At least three different manufacturers have been identified with M3 PEP. The minor differences existing in the product between the three are such that difficulties in alignment (in both dimensions) become quickly apparent when mass areas of PEP are placed.

Observation. The problems with placing M3 PEP can be eliminated by using a constant slope (approximately 0.5%) and by rigorously segregating the M3 by manufacturer.

(5) Item. Forming concrete pads.

Discussion. The use of wood forming for concrete pads involves several added steps in forming, new nails with each forming

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task, partial replacement of lumber after minimum reuse and inconsistent results (particularly where forming lumber is semi-hardwood subject to warpage in two dimensions).

Observation. Steel forms for concrete pads are vastly more economical of time and materials, as well as providing a far higher quality result.

(6) Item. Identification of critical equipment.

Discussion. During the conduct of continuing and diverse construction operations, certain items of equipment become critical to the sustaining of the operation. Experience indicates, for example, that the loss of a front loader may stop hauling operations affecting many other phases of a project. A water distributor is essential for concrete work, compaction and dust control.

Observation. Where equipment assets are limited, continuing demand analysis is necessary not only to provide the proper maintenance for those items, but to identify, in connection with construction priorities, those items which are most critical in order that maintenance priorities may be similarly established.

(7) Item. Cross training of personnel.

Discussion. Units of the combat battalions are not manned to provide drivers and operators for sustained 24 hour operation of trucks and equipment.

Observation. Cross training of all personnel of engineer operating squads in driving 5-ton dump trucks and an augmentation in the number of operators assigned to the equipment sections is necessary for two shift operation.

(8) Item. Lighting for night operations.

Discussion. In many instances, work at night has been slowed by lack of adequate lighting at work sites. Vehicle headlights are at best a poor substitute for floodlighting sets. Floodlighting sets are not currently provided combat battalions.

Observation. Sufficient lighting equipment must be obtained to provide necessary lighting for efficient night construction operations.

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15 May 1966

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(9) Item. Use of lateritic soil on top level of fill.

Discussion. Raw lateritic soil has been used in a compacted six inch lift to stabilize fill in the Dong Ba Thin Military Complex. Many problems have been encountered in final grading due to the large boulders of up to 36 inches in diameter which are inevitably present in the raw laterite.

Observation. Lateritic material taken from sources or pits with rock core must be screened or crushed to provide a workable material for final grading and compaction.

(10) Item. Shortage of survey personnel and equipment.

Discussion. A severe shortage of survey personnel exists in a combat battalion committed to construction. This often delays final grading operations and requires limited survey work to be done by relatively inexperienced or unskilled personnel.

Observation. Maximum use must be made of improvised equipment, hand levels and line levels. Platoon leaders with a civil engineering background must be employed to meet survey requirements on many platoon projects.

(11) Item. Prevention of rust.

Discussion. Due to the high humidity, rain and the proximity to salt water, weapons and exposed ammunition have a tendency to corrode rapidly. The longer this corrosion is left unchecked the worse it becomes, until the weapon or ammunition becomes useless.

Observation. Command emphasis must be placed on daily care and cleaning of weapons ordnance. Frequent inspections help to insure that this policy is carried out.

(12) Item. Excessive wear on radiator, tractor, FT, Allis Chalmers.

Discussion. Operation under sand conditions produces great wear on radiator tubes causing pinhole leaks.

Observation. If armored core radiators are not available, drivers must be cautioned, when walking equipment, to drive forward, not backward, thereby reducing the amount of sand and dust pulled into the radiator.

(13) Item. Fuel contamination.

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Discussion. A great deal of water has been found in diesel fuel. The water causes both maintenance and operating problems in diesel and multifuel engines.

Observation. Fuel tankers must be checked daily for water. Separator filters must be changed frequently. Fuel filters on equipment, especially multifuel, must be drained daily.

## (14) Item. Faulty air compressor diaphragms.

Discussion. Diaphragms on the 250 CFM air compressors, manufactured by Joy, last from two to three weeks during sustained 24 hour operations.

Observation. Prescribed load lists must be constantly revised, as demand experience is accumulated, to insure that an adequate supply of diaphragms are requisitioned and on hand.

## (15) Item. Care, service and use of vehicles and equipment.

Discussion. The heat, humidity, sand and dust conditions prevalent during operations, have reduced the life of all equipment and vehicles in Vietnam. All rubber and petroleum products wear out much faster due to sand and dust abrasive actions. Other items of equipment such as tents, clothing and leather boots are subject to mildew and rotting.

Observation. It is necessary to periodically instruct all personnel on the proper use and maintenance of their equipment while serving under these conditions. Vehicles and equipment are lubricated more frequently; heavier oil is used in hydraulic systems; and the electrolyte in batteries is diluted because of the heat. Continuing emphasis must be placed on keeping clothing dry and vehicles and equipment clean, as well as lubricated, in order to maintain their useful life under these conditions.

## (16) Item. Provision of weather-tight, secure storage for expendables and TA 50-901 items.

Discussion. An expedient means of providing weather-tight supply area for small expendable and TA items is required for security and protection.

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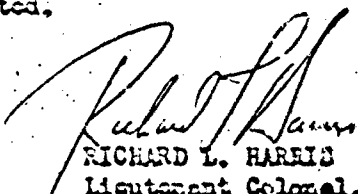
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15 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966, Reports Control Symbol CSGPO-20(R1)

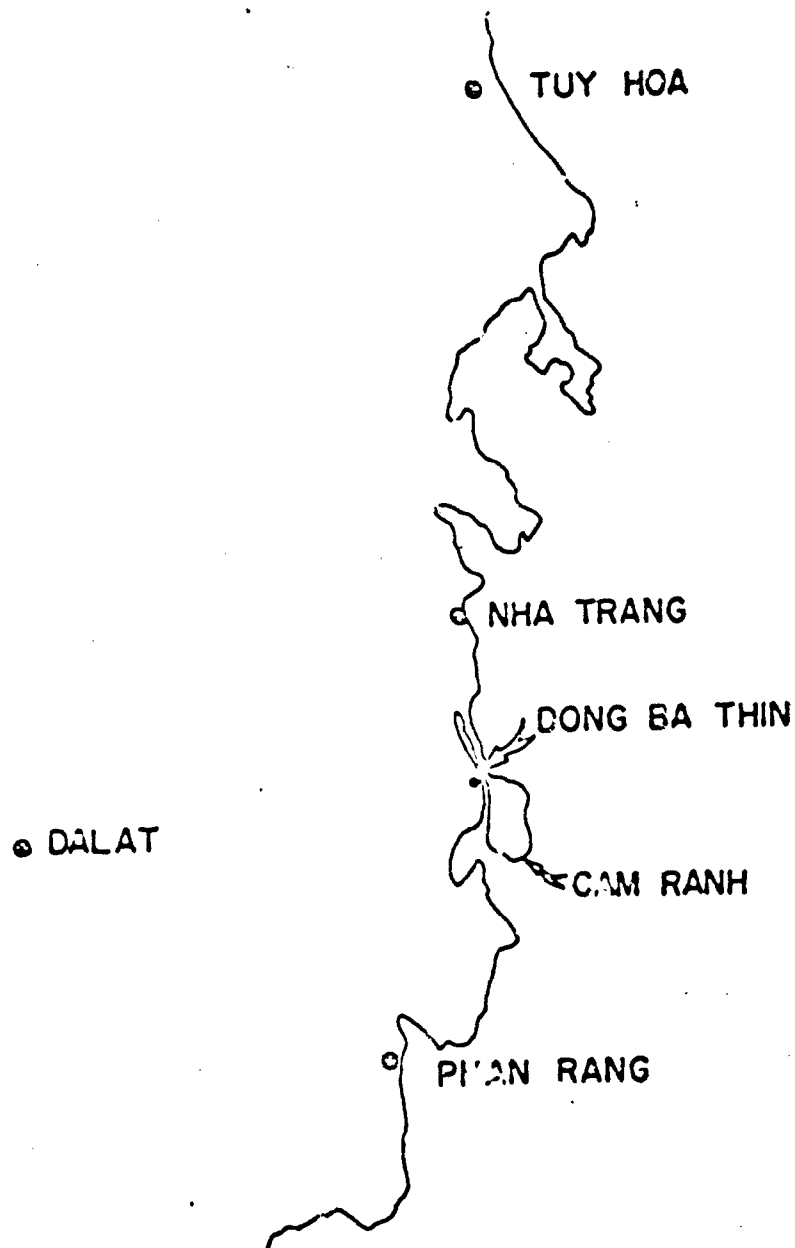
Observation. An effective storage area is obtained by raising the tent frame of a straight wall maintenance tent approximately two feet until the eaves of the tent are slightly above the level of a COMEX container. The size of the tent and the COMEX's are such that four COMEX's fit along each side evenly. The sides of the tent may be spread over the top of the COMEX's to provide drainage to the outside and away from the inside. Walls and doors, at front and rear of the tent, may be additionally constructed.

5 Incl  
as

  
RICHARD L. HARRIS  
Lieutenant Colonel, CG  
Commanding

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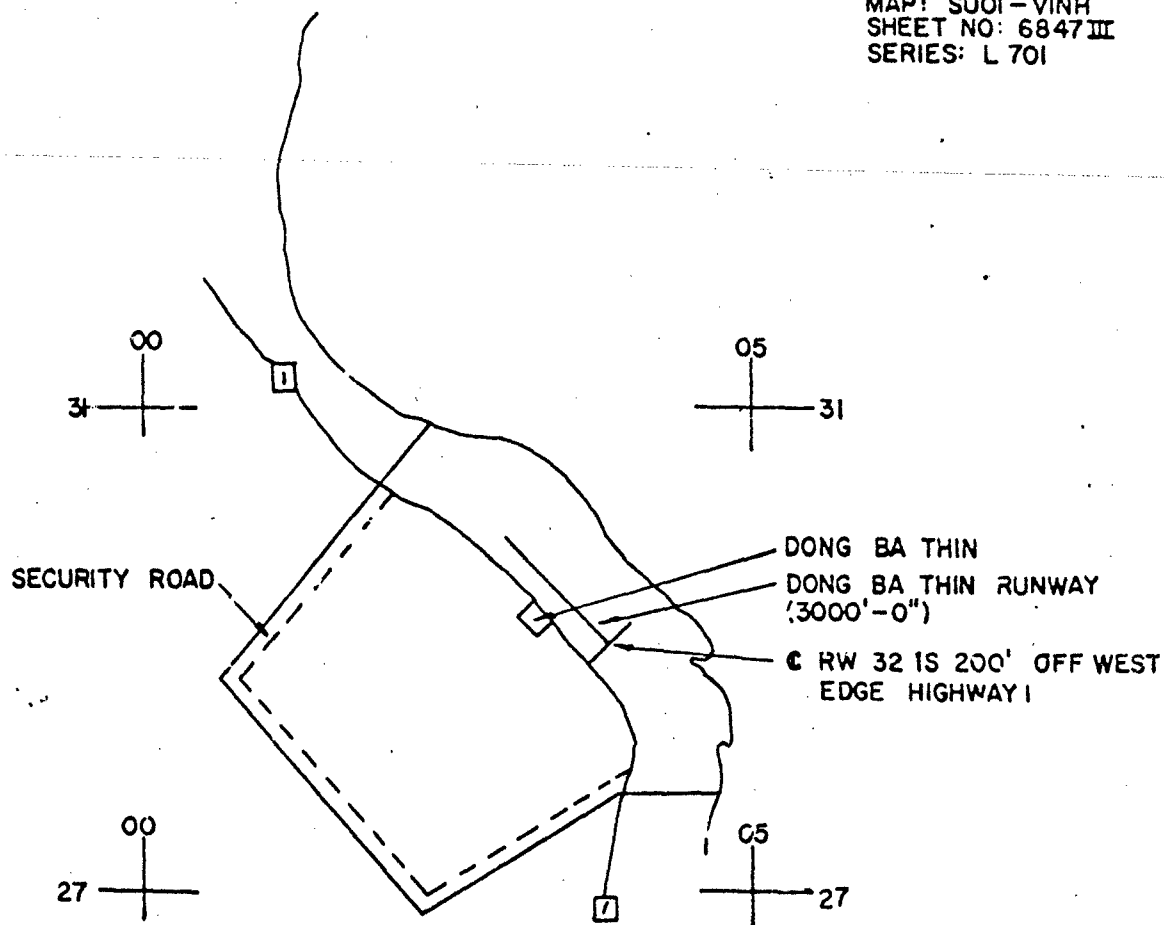
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REFERENCE:

MAP: SUOI-VINH  
SHEET NO: 6847 III  
SERIES: L 701



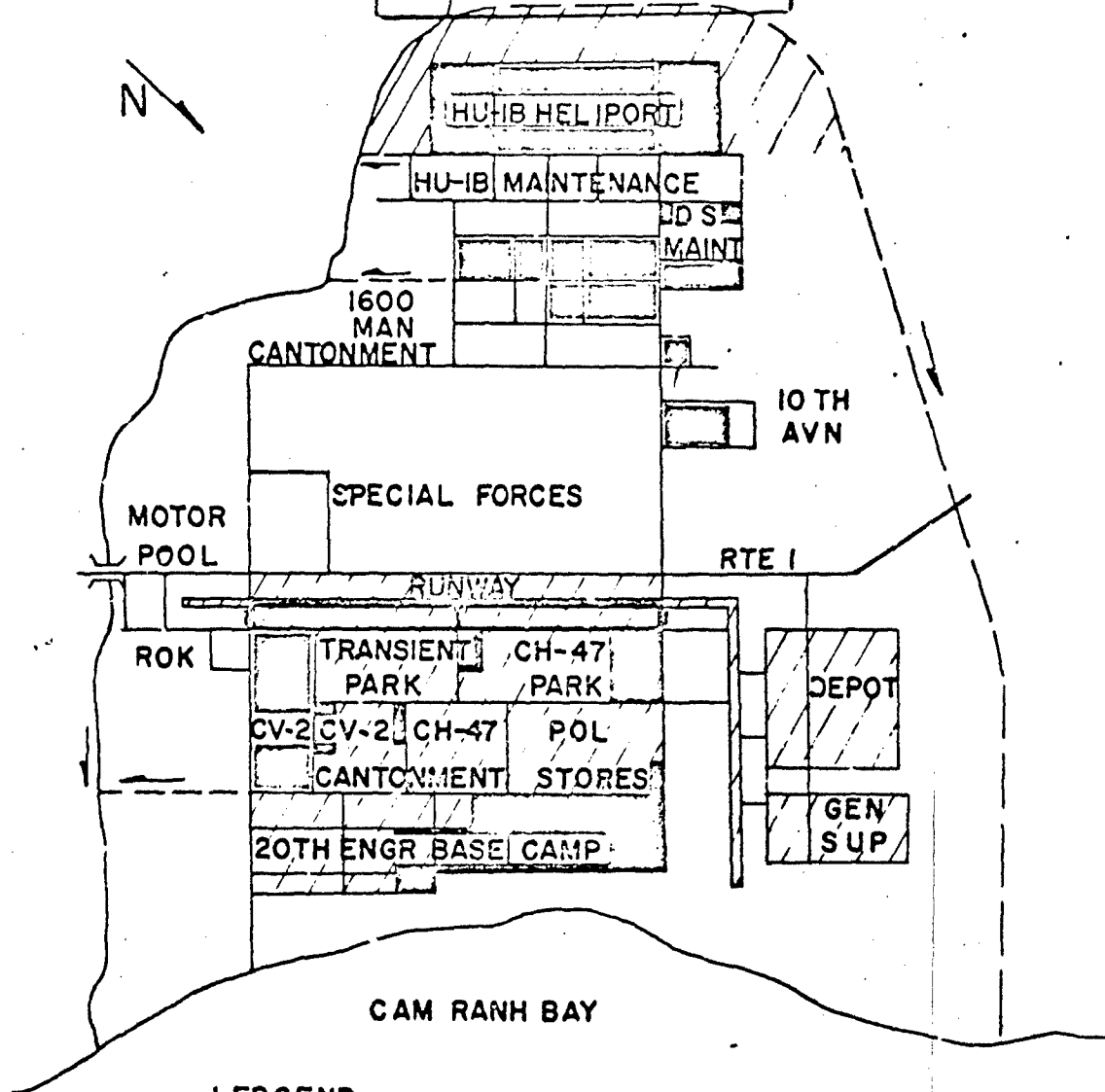
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# DONC BA THIN COMPLEX ROAD NETWORK FOR OFFICIAL USE ONLY



## LEDGEND

-  COMPLETED CONSTR
-  CONSTR AT GRADE
-  CONSTR BELOW GRADE

SCALE 1"=1000'

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Headquarters, 20th Engr Bn (Cmbt)  
DONG BA THIN, RVN  
21 February 1966

**MILITARY CIVIC ACTIONS PLAN 1**  
References:

- a. FM 41-10
- b. MACV Directive 10-1
- c. MACV Directive 40-9
- d. USARV Regulation 10-1, as changed
- e. 18th Engineer Brigade Regulation 10-1, as changed
- f. 35th Engineer Group (Const) Regulation 10-1

**TASK ORGANIZATION**

Task Force Alfa: A Co., 20th Engineer Battalion (Cmbt)  
Hq Co., 20th Engineer Battalion (Cmbt)  
Task Force Bravo: B Co., 20th Engineer Battalion (Cmbt)  
513th Engineer Company (DT)  
Task Force Charlie: C Co., 20th Engineer Battalion (Cmbt)  
584th Engineer Company (LE)  
Task Force MEDCAP: Medical Section, Hq Co., 20th Engineer Battalion  
(Cmbt)

1. SITUATION: Within the US mission in Vietnam, responsibility for primary Civil Affairs role, including Civic Action, is vested in the US Operations Mission (USOM). USOM is responsible for the program supporting a counterinsurgency effort designed to have a direct and immediate impact on the rural population. This program is directed at rapidly providing resources to the rural sector of society to assist in improving living standards and developing governmental machinery in those areas responsive to the needs of the people. US Military Assistance Command (MACV) provides the advisory effort in support of Republic of Vietnam Armed Forces (RVNAF) military operations in Vietnam and these advisors are emphasizing the importance of an integrated Civic Action Plan at all RVNAF levels for all operations. The 18th Engineer Brigade, 35th Engineer Group (Const) and the 20th Engineer Battalion (Cmbt)(+) possess personnel and equipment assets which can be used to make a significant contribution to the program. Both USOM and MACV encourage a vigorous, integrated Civic Action Program with centralized control of resources and execution.

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Integration of such programs locally are achieved by coordination with the Mayor of the City of Cam Ranh, MACV Sub-sector Advisor (located at Ba Ngoi, RVN) and the USAID Representative, Region II (located at Nha Trang, RVN).

2. MISSION: 20th Engineer Battalion (Cmbt) (+) -- Undertake as soon as possible a continuing program of Military Civic Action (MILCAP) responsive to the needs of the people of TAN THANH, RVN.

### 3. EXECUTION:

#### a. Concept of Operation.

(1) General. Three organizational task forces and a medical task force provide civic action assistance to TAN THANH, City of CAM RANH, RVN. Task Force Commanders will develop task force Civic Action Programs and insure that all personnel are acquainted with the concept of this plan. Emphasis in developing programs will be placed on short duration projects which provide for participation by the people of TAN THANH. Task force personnel will be encouraged to actively participate in established programs devoting voluntary off-duty time to these efforts. Task Force Commanders are authorized and encouraged to devote one, one-half day per week to approved projects; the nature and extent of personnel and equipment resources assigned to the effort must not impair the operational missions of units concerned. A typical task force effort would be one squad day and one-half grader day. A typical short duration project within the Civic Action Category: "Health and Sanitation" would be the police and covering of an open garbage area. Execution of this MILCAP will be conducted in three phases as indicated below. "

#### (2) Phasing:

##### (a) Phase I, Initial Undertakings (agency)

1. Liaison with Mayor of the City of CAM RANH, Sub-sector Advisor and village officials (Civic Action Committee)

2. Application for MEDCAP assistance (TF MEDCAP)

3. Development of MILCAP project plans (TF A, B, C)

##### (b) Phase II, Interim Undertakings (agency)

1. Approval of proposed MILCAP projects in principle (Civic Action Committee)

2. Approval of proposed MILCAP projects by Mayor of CAM RANH CITY and Sub-sector Advisor. (Civic Action Committee)

3. Initiation of approved short-duration projects not dependent or immediately dependent on material (TF A, B, C)

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h. Process requests for materials required to support approved MILCAP projects. (TF A, B, C through Civic Action Officer)

(c) Phase III, Subsequent Undertakings (agency)

1. Initiate MEDCAP (TF MEDCAP)
2. Continue and complete projects initiated in Phase II; initiate and complete projects requiring materials, as material become available. (TF A, B, C)
3. Provide continuity to 20th Engineer Battalion MILCAP by repeating those actions in Phase I and II necessary to the execution of Phase III. (All)

b. TF Alfa (CO, A Co is TF Commander):

(1) Prepare MILCAP project plan which support HEALTH AND SANITATION (see Inclosure 1, reference e.).

(2) Execute approved projects at the earliest possible time.

c. TF Bravo (CO, B Co is TF Commander):

(1) Prepare MILCAP project plans which support CONSTRUCTION (see Inclosure 1, reference e.).

(2) Execute approved projects at the earliest possible time.

d. TF Charlie (CO, C Co is TF Commander):

(1) Prepare MILCAP project plan which support COMMERCE AND INDUSTRY a/o AGRICULTURE AND NATURAL RESOURCES (see Inclosure 1, reference e.)

(2) Execute approved projects at the earliest possible time.

e. TF MEDCAP (Battalion Surgeon is TF Commander):

(1) Apply for provision of MEDCAP assistance to TAN THANH.

(2) Initiate MEDCAP at earliest possible time.

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f. Coordinating Instructions

(1) Projects involving COMMUNITY RELATIONS and REFUGEE ASSISTANCE may be proposed and executed by any or all of the organizational task forces and/or by the Command as whole.

(2) Execution of MILCAP projects within TAN THANH will be a coordinated effort approved by the Civic Action Committee and under the staff supervision of the Civic Actions Officer. Normally, all efforts, other than off-duty time, will be applied by all task forces on one day of the week as designated by the Civic Actions Committee after coordination with local officials.

(3) The 20th Engineer Battalion (Cmbt) Civic Action Committee, composed of a Chairman, Civic Action Officer, Secretary and two members will act as the steering coordinating body for all Civic Actions. The Civic Action Officer is a special staff officer of battalion commander and maintains staff supervision of Civic Actions. Personnel serving in the aforementioned positions will be appointed in Special Orders.

(4) The utilization of any assets other than medical for execution of approved MILCAP projects will be fully coordinated by Task Force Commanders with S-3, 20th Engineer Battalion (Cmbt).

(5) At no time will priority of effort or assets be devoted to MILCAP projects.

(6) This plan is effective for planning and execution on receipt.

4. ADMINISTRATION AND LOGISTICS:

a. Materials.

(1) To the extent possible, MILCAP projects will deemphasize the requirements for Class IV type material. Scrap or natural materials will be used to the maximum extent.

(2) Materials required to support approved MILCAP projects will be requested through the Civic Action Officer. S-4, 20th Engineer Battalion (Cmbt) will assist the Civic Action Officer as necessary. Materials required will be requested as directed by Civic Action Officer, 35th Engineer Group (Const).

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b. Labor . Maximum participation in MILCAP projects by the people of TAN THANH is desired. Task Force Commanders will identify how people may be constructively utilized in development of projects, self-help, technical assistance or education. Arrangements for participation will be made by the Civic Action Officer.

c. Public Information. MILCAP projects implemented by task forces of this command will be publicized to gain loyalty, support and respect of the people. Public Information Officer, 20th Engineer Battalion (Cmbt) will coordinate with Task Force Commanders in the preparation of photographs and news releases. Drafts of news releases and photographs will be submitted by the PIO to the Civic Action Officer for inclosure with the weekly Civic Action Report.

d. Reports.

(1) Task Force Commanders will submit weekly Civic Action Report, as requested by the Civic Action Officer.

(2) Civic Action Officer will prepare and submit the Civic Action Report specified in reference e. and f.

5. COMMAND AND SIGNAL: No change from standing operating procedures.

Acknowledge

RICHARD L. HARRIS  
Lt Col, CE  
Commanding

DISTRIBUTION: /  
OFFICIAL:

*L. L. Wentworth*  
Wentworth  
S-3

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RECAPITULATION OF ENGINEER REPORT

Through 30 April 1966

PROJECT

|                        | Log 35-73<br>Airfield | Bde 65-13DC-35<br>1600 Man<br>Contingent | Bde 65-14DC-35<br>HU-1B Helipad | Bde 65-15DC-35<br>CV-2 Parking<br>Apron | Bde 65-16DC-35<br>CH-47 Helipad | Bde 65-47DC-35<br>Admin Bldgs | Bde 65-61DC-35<br>Warehouse Depot | Bde 65-68DC-35<br>Warehouse (DS) |
|------------------------|-----------------------|--|---------------------------------|---|---------------------------------|-------------------------------|-----------------------------------|----------------------------------|
| Man Hours              | 33,088                | 82,687                                   | 49,348                          | 59,624                                  | 2,797                           | 2,175                         | 4,711                             | 11,507                           |
| US Troops              | 18,424                | 82,047                                   | 36,610                          | 44,352                                  | 2,797                           | 2,175                         | 1,051                             | 11,507                           |
| Indigenous             | 14,664                | 640                                      | 12,738                          | 15,272                                  |                                 |                               | 3,660                             |                                  |
| Equipment Hours        | 9,683                 | 35,977                                   | 14,185                          | 18,181                                  | 1,941                           | 480                           | 790                               | 7,636                            |
| Tons of Fuel           | 3,135                 | 307,052                                  | 32,276                          | 67,710                                  | 76,920                          | 441                           |                                   | 60,328                           |
| Yards of Concrete      |                       | 964                                      | 561                             |   |                                 |                               |                                   |                                  |
| Acres Cleared          |                       |  | 36.5                            | 28.6                                    |                                 |                               | 60                                | 5                                |
| Miles of Roads         |                       | 2.5                                      | 4.6                             | 2.1                                     |                                 |                               | 0.5                               |                                  |
| Feet of Runway         | 3,000                 |  |                                 |   |                                 |                               |                                   |                                  |
| Vertical Const (sq ft) |                       | 7,960                                    |                                 |   |                                 | 1,920                         |                                   |                                  |
| Latentia Placed (tons) |                       | 2,550                                    | 10,532                          | 20,113                                  |                                 |                               |                                   | 570                              |
| PSP Placed (sq ft)     |                       |  |                                 | 408,068                                 |                                 |                               |                                   | 40,000                           |
| Taxiway (lin ft)       |                       |  |                                 | 65                                      |                                 |                               |                                   |                                  |

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RECAPITULATORY REPORT OF ENGINEER REPORT

Through 30 April 1966

P R O J E C T

|                        |  |  |                     |                           |  |   |  |   |
|------------------------|--|--|---------------------|---------------------------|--|---|--|---|
|                        | Bde 66-9DC-35<br>900 Man<br>Cantonment | Bde 66-14DC-35<br>Airfield Extension & Taxiway | Bn 66-23<br>Bainage | SUB TOTAL<br>DONG BA TRAM | Bde 65-37DC-35<br>ROK Marine Bde<br>Headquarters | Bde 66-22DC-35<br>ROK Armed Forces<br>Radio Station | Gp 35-69<br>Third Country<br>Troop Support | Gp 35-82<br>Hvy Equip Spt<br>ROK Marine Bde |
| Man Hours              | 78,061                                 | 35,018   | 582                 | 379,598                   | 6,099  | 3,188   | 5,023                                      | 487   |
| US Troops              | 51,631                                 | 31,938   | 582                 | 283,114                   | 6,099  | 3,188   | 5,023                                      | 487   |
| Indigenous             | 26,430                                 | 3,080  |                     | 76,484                    |  |   |  |   |
| Equipment Hours        | 24,342                                 | 12,652   | 395                 | 127,272                   | 463  | 543   | 1,872                                      | 274   |
| Tons of PIII           | 276,666                                | 28,097   |                     | 832,625                   |  | 90  |  |   |
| Yards of Concrete      | 800                                    |  |                     | 2,265                     | 60   | 12.8  |  | 40  |
| Acres Cleared          | 6.5                                    | 2.6  |                     | 139.2                     |  |   |  |   |
| Miles of Roads         | 0.4                                    | 0.3  |                     | 10.4                      |  |   |  | 0.6   |
| Feet of Runway         |  |  |                     | 3,000                     |  |   |  |   |
| Vertical Const (sq ft) | 4,950                                  |  |                     | 14,830                    | 4,800  | 960   |  |   |
| Laterite Placed (tons) |  | 53,930   |                     | 87,695                    |  |   |  | 540   |
| PSP Placed (sq ft)     |  | 111,950  |                     | 560,018                   |  |   |  |   |
| Taxiway (11n ft)       |  | 2,708  |                     | 2,773                     |  |   |  |   |

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RECONSTRUCTION OF PHONG A LIFTWAY

Through 30 April 1966

PROJECT

|                        |                                    |       |       |       |       |       |       |     |  |
|------------------------|------------------------------------|-------|-------|-------|-------|-------|-------|-----|--|
|                        | SUB TOTAL<br>BOX MARINE<br>BRIGADE |       |       |       |       |       |       |     |  |
| Man Hours              | 14,797                             | 836   | 2,444 | 1,931 | 1,794 | 7,065 | 1,030 | 120 |  |
| US Troops              | 14,797                             | 836   | 2,444 | 1,931 | 1,794 | 7,065 | 1,030 | 120 |  |
| Indigenous             |                                    |       |       |       |       |       |       |     |  |
| Manpower Hours         | 3,152                              | 730   | 1,498 | 572   | 384   | 3,182 | 291   |     |  |
| Tons of Yell           | 90                                 | 2,745 |       | 80    |       | 2,825 |       |     |  |
| Yards of Concrete      | 112                                |       |       |       |       |       |       |     |  |
| Acres Cleared          |                                    |       |       |       |       |       |       |     |  |
| Miles of Roads         | 0.6                                |       |       |       |       |       |       |     |  |
| Feet of Runway         |                                    |       |       |       |       |       |       |     |  |
| Vertical Const (sq ft) | 4,950                              |       |       |       |       |       |       |     |  |
| Lateral Placed (tons)  | 540                                |       | 1,831 | 981   |       | 2,832 |       |     |  |
| Peb Placed (sq ft)     |                                    |       |       |       |       |       |       |     |  |
| Trailway (lin ft)      |                                    |       |       |       |       |       |       |     |  |

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(3)

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REGIMENT OF ENGINEERS

Through 30 April 1966

PROJECT

|                        | Bn Projects | Civic Action | 569th Topo Co Support | TOTAL   |  |  |  |  |  |
|------------------------|-------------|--------------|-----------------------|---------|--|--|--|--|--|
| Van Pours              | 11,931      | 410          | 10                    | 394,591 |  |  |  |  |  |
| US Troops              | 11,931      | 410          | 10                    | 318,507 |  |  |  |  |  |
| Indigenous             |             |              |                       | 76,484  |  |  |  |  |  |
| Fuller Pours           | 1,908       | 140          | 8                     | 135,673 |  |  |  |  |  |
| Tons of Fill           | 2,156       |              |                       | 857,696 |  |  |  |  |  |
| Yards of Concrete      |             |              |                       | 2,377   |  |  |  |  |  |
| Acres Cleared          |             |              |                       | 139.2   |  |  |  |  |  |
| Miles of Roads         |             |              |                       | 11      |  |  |  |  |  |
| Feet of Runway         |             |              |                       | 3,000   |  |  |  |  |  |
| Vertical Const (sq ft) |             |              |                       | 19,750  |  |  |  |  |  |
| Laterite Placed (tons) |             |              |                       | 91,067  |  |  |  |  |  |
| FCP Placed (sq ft)     | 660         |              |                       | 560,018 |  |  |  |  |  |
| Textway (lin ft)       |             |              |                       | 2,773   |  |  |  |  |  |

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43

17

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JOHN M. HERRARD

Capt, CE  
Adjutant

FOR THE COMMANDER:

2. Concur in Commanders Observations.

1. In accordance with Department of the Army Regulation 525-24, dated 29 October 1959 and USAF Circular 870-1, dated 11 November 1965, with Change 1 dated 1 April 1966; Subject: Operational Report on Lessons Learned (RCS CSGPO-28 (RI)), the subject report is forwarded for the 20th Engineer Battalion (Combat) (Army).

TO: Assistant Chief of Staff for Force Development, Department of the Army (ACSFOR-DA), Washington, D. C. 20310

HEADQUARTERS, 35th Engineer Group (Construction), APO U.S. Forces 96312 16 May 1966

SUBJECT: Operational Report on Lessons Learned for Quarterly Period Ending 30 April 1966, Reports Control Symbol CSGPO-28 (RI)

1st Ind

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CSA-3 (15 May 1966)

44

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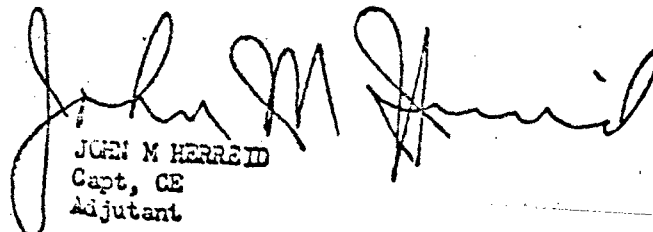
EGA-3 (15 May 1966) 1st Ind  
SUBJECT: Operational Report on Lessons Learned for Quarterly Period  
Ending 30 April 1966, Reports Control Symbol CSGPC-28 (RI)  
HEADQUARTERS, 35th Engineer Group (Construction), APO U.S. Forces 96312  
16 May 1966,

TO: Assistant Chief of Staff for Force Development, Department of the Army  
(ACSFOR-DA), Washington, D. C. 20310

1. In accordance with Department of the Army Regulation 525-24, dated 29 October 1959 and USARV Circular 870-1, dated 11 November 1965, with Change 1 dated 1 April 1966; Subject: Operational Report on Lessons Learned (ROSGSGPC-28 (RI)), the subject report is forwarded for the 20th Engineer Battalion (Combat) (Army).

2. Concur in Commanders Observations.

FOR THE COMMANDER:

  
JOHN M. HERREID  
Capt, CE  
Adjutant

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(5)

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LESSONS LEARNED - VIETNAM

Section I. Suggested Areas for Additional Training Emphasis.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSCPO-27 (TL), dated 16 October 1965.

Incident/Observation(s)

Additional emphasis on training for units deploying to Vietnam should include:

1. Land navigation.
  2. Hand and arm signals.
  3. Long road marches in hot weather through dense woods.
  4. Live fire squad and platoon problems integrating all weapons within the platoon.
  5. Independent squad, platoon and company operations of a minimum 3-5 day duration.
  6. Increased live fire exercises emphasizing command, control and fire discipline.
  7. Arbushes and patrolling in dense brush or jungle terrain.
  8. Booby traps, mines and command detonated weapons.
  9. Night vision and target detection at night.
  10. Field sanitation and personal hygiene.
  11. Construction (practical work) of bunkers and the laying of protective wire.
  12. Indoctrination of the individual soldier stressing the capabilities and vulnerabilities of the enemy.
- B. Combat Operations After Action Report (ACV/DCS/J3/J2), dated 30 December 1965.

Incident/Observation(s)

An A-1H Special Tactical Zone operation was conducted with the mission to attack along a road from a built-up area to a

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Special Forces Camp to relieve the pressure on the Special Forces Camp, which was under attack by the VC, and destroy all VC in zone. This operation was accomplished by combined forces to include Armor Cav, Infantry, Mechanized forces, Marines, Rangers, Artillery, Engineers, US and VII Airforces and US Army aviation.

Lessons Learned

"More effort and training must be placed on counter-ambush techniques - in addition to prestriking known ambush sites and utilizing long-range patrols to seek out the ambush, correct tactical formations, individual counterambush training and fire discipline when operating against the VC are necessary to prevent a successful ambush."

C. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. The LAW was effective against the a-thills behind which the PAVN were hiding.
2. "Greater emphasis should be placed on the ability of personnel down to and including fire team leaders to adjust artillery and mortar fire."
3. "We must take time and every opportunity to train our men, especially our replacements, to perfection in small unit fire and movement and fire and maneuver. If we do not do this, men will be killed who would not otherwise be killed."
4. "The individual soldier must become at least as good as the PAVN in camouflage techniques and use of terrain and foliage to cover and conceal his movements. This must be emphasized."

D. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "Emphasis has been placed on offensive tactics to the point that we may have overlooked the basic facts that at some time the defense must be assumed. The small unit commander, notably the platoon commander, often fails to appreciate the use of defensive terrain or the proper employment of supporting weapons in the defense."

Lesson Learned

Do not emphasize offensive tactics in training to the detriment of the defense.

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"This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied."

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2. Meeting engagements of small units on patrol have been the most frequent contact throughout all TACFs (Tactical Area of Responsibility). Initially, reaction by the point was not rapid enough to deliver fire at the elusive VC along trails. With practice, increased kills are being realized. Jungle lane type ranges with numerous surprise targets, have been a successful training device in reflex conditioning and increasing 'Snapfire' marksmanship.

3. The enlisted personnel presently in Vietnam have not been taught counterinsurgency. They are well versed in counter-guerrilla operations but have a lack of understanding when it comes to civic action visits to villages. The platoon commanders have a working knowledge of counterinsurgency. The enlisted personnel down to squad leader must be taught the overall picture of what the government is trying to accomplish in Vietnam. In this connection everyone should receive basic instruction on religious customs and superstitions of the people of the area in which they are working.

Lesson Learned

That all NCO schools begin to teach counterinsurgency operations. That a more dynamic program of area study be conducted prior to arrival into Asian countries.

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Section I (continued)

E. Staff Visit of USCOMAFEC Training Team to US Army Tactical Units in RVN, dated 22 March 1966.

Incident/Observation(s)

1. During the period of 1-16 March 1966, a team of 4 officers visited US Army tactical units in RVN. The purpose of the trip was:

a. To determine the compatibility of the Republic of Vietnam oriented training conducted in the basic training and advanced infantry training programs with the actual needs of the infantry replacements assigned to United States Army units in Republic of Vietnam.

b. To insure that the COMUS training programs reflect all of the techniques required of the Republic of Vietnam replacement and to apply from information gained prompt realignment of our present individual training program where required.

2. This team visited 3 division headquarters, 10 brigades, 20 Infantry and/or Airborne battalions, 2 Artillery battalions and 1 Air Cavalry squadron.

3. Conclusions of the team were:

a. Commanders at all levels have high praise for the individual replacement soldier and consider him highly trained and well motivated.

b. The advanced infantry program, particularly at Fort Gordon and Fort Polk, should be reviewed in light of the specific areas stressed by all commanders as follows:

- (1) Personal hygiene.
- (2) Firing of the individual weapon during darkness.
- (3) The techniques of a perimeter defense.
- (4) Land grenades.
- (5) Use of arm and hand signals.
- (6) Radio/telephone procedures.
- (7) Physical training and extreme physical endurance exercises.

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against "bunching-up."

(8) Squad and platoon formations with stress

(9) Patrolling, squad size.

(10) Fire discipline.

(11) Weapons safety.

(12) Quick reaction type training.

traps.

(13) Detection of punji stakes, mines and booby

malaria tablets.

(14) Water discipline and the necessity for using

(15) Target detection (Crack-Thump Method).

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Section I (continued)

F. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. US infantrymen, with limited additional training and using organic unit resources, have successfully conducted long range reconnaissance patrol operations. The nature of the enemy and terrain in Vietnam necessitates long range ground reconnaissance activities as a means of finding the enemy or confirming their nonexistence.

2. For most troops arriving in RVN, it is the first time that they have experienced field living conditions in an area of very low sanitary standards. As a result of poor individual sanitary habits and low resistance, a high incidence of gastro-intestinal diseases occurs.

The incidence of these diseases can be reduced by:

a. Establishment of field expedient handwashing facilities at urinals, latrines and mess halls. Provide NCO supervision to insure that troops wash their hands before entering the mess line.

b. Screen, disinfect, spray and wash latrines, urinals and mess areas.

c. Provide NCO supervision to insure thorough sterilizing of mess gear before entering the mess line and insure thorough cleaning of mess gear after eating.

d. Prohibit vehicles from driving in or near the mess and billeting areas to minimize the dust stirred up. Oil and/or wet down the areas around the mess hall.

e. Emphasize sanitation requirements in command information briefings. Post reminders on bulletin boards and in other prominent places.

G. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. Every major operation has been characterized by the use of helimobile displacement of artillery, aerial resupply, use of airborne Command and Control ships and aerial medical evacuation. These techniques are used extensively, and parachute operations infrequently (none to date by US Airborne units).

Lesson Learned

A need exists to change the present training emphasis for airborne units from parachute operations to helimobile operations.

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2. Prior to arrival of the US units in Vietnam, the Viet Cong had almost complete freedom of movement at night. Very few night operations were conducted by ARVN forces. This brigade initiated several night infiltration operations shortly after arrival which threw the VC into a state of confusion and caused them to be unsettled for many days thereafter. Night operations are now the norm for this unit. The results are: (1) Reducing casualties by fighting or moving under cover of darkness; (2) Gaining surprise over the VC; and (3) Destroying freedom of movement previously enjoyed by the enemy. Maximum use should be made of night observation devices to fully exploit our technological advantage.

Lesson Learned

Emphasis should be placed on training for and conduct of night combat operations in Vietnam.

3. Obtaining information of VC movements and locations is often the most difficult and frustrating part of any operation in Vietnam. Because of their penchant for withdrawing from and avoiding contact with US forces, our short range reconnaissance patrols are frequently unproductive. This situation presents many lucrative opportunities for the employment of Long Range Reconnaissance Patrols operating 25 to 50 kilometers from friendly units. The VC, thinking themselves safe from immediate contact with US forces, tend to use less care and caution than normal and can be observed as they assemble or move; subsequent operations can then be planned to destroy them. Such operations normally enjoy the advantage of surprise. Our own LRRP has been used extensively and has been very successful in detecting and reporting VC activity and movement.

4. Safety programs in CONUS are directed primarily toward traffic safety and range safety. These programs do little to prepare the soldier for living in an armed environment. After arrival in Vietnam, several serious accidents occurred due to the careless or thoughtless discharge of firearms.

CONUS safety programs should be expanded to include a thorough indoctrination on the safe handling of loaded weapons over extended periods of time.

5. US combat units in Vietnam make frequent air moves from one operational area to another. In many of these moves, C-123 and CV2B aircraft are used, although these aircraft are only rarely encountered during training in CONUS.

In view of the extensive use made of these aircraft in Vietnam, units should train in the loading and use of the C-123 and CV2B prior to deployment to Vietnam.

6. Because of the extensive use made of patrol tactics and the large number of semi-independent platoon and company missions

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performed by our units in Vietnam, the knowledge and skills of the small unit leader are more important than ever before. All squad/team leaders and other E1 in positions of responsibility, such as radio-telephone operators, must be thoroughly familiar with the adjustment of artillery and mortar fire and must be capable of calling for and adjusting TAC Air. Leaders of small units must be highly trained in cross-country navigation, map reading, use of field expedient antennas, ambush and counter ambush techniques and day and night patrolling, to mention just a few. The success of an operation frequently depends entirely on how well the squads and platoons perform their assigned tasks. Leaders must be trained to a very high state and then given combat missions and responsibilities commensurate with this training. Unit commanders who try to retain direct centralized control of their units in the jungled and mountainous terrain of Vietnam will not succeed as well as those who give mission type orders and who allow their leaders to take action within the scope of that assigned mission.

Constant and continued emphasis should be placed on training and preparing the small unit leader for combat in Vietnam, with emphasis on those skills designed to allow him to operate with self-confidence and assurance, even in the absence of orders.

H. 1st Air Cavalry Division (Airmobile), 3d Battalion, 18th Artillery, dated 28 March 1966.

Incident/Observation(s)

Specialized unit and/or individual training.

a. Artillery units being deployed to the Republic of Vietnam are faced with the necessity of constructing field fortifications upon arrival in-country. Such units are required to construct gun pits and bunkers. Officers of heavy artillery units, or units with heavy equipment, are frequently faced with the necessity of classifying bridges over which their equipment will pass.

b. All individuals or units programmed for deployment to the Republic of Vietnam should receive specialized training in the construction of field fortifications. Officers being deployed with, or programmed for assignment to, units which have heavy equipment should receive some training on how to classify bridges.



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Section I (continued)

I. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

Incident/Observation(s)

There is a need for trained rappelling teams within the supported units. The dense jungle growth which covers a major portion of our operational area prohibits the landing of helicopters in critical areas for such missions as emplacement of forces, resupply and medical evacuation. Rappelling teams are normally equipped with pioneer engineering equipment such as power saws and axes used to clear areas and improve them sufficiently for use as helicopter landing sites. Rappelling also permits the emplacement of small forces such as long range reconnaissance patrols in areas where they could not otherwise be landed.

J. 1st Infantry Division, Lessons Learned, dated 15 March 1966.

1. Incident/Observation(s)

Physical conditioning. Combat operations, extreme heat and difficult terrain place heavy physical demands on the soldier in Vietnam. There is no substitute for intensive physical conditioning.

Troops in top physical condition upon leaving CONUS will become more easily acclimated to conditions in Vietnam.

2. Incident/Observation(s)

Maintaining contact. Once contact has been made, it must be maintained to keep the enemy off balance. The VC are well versed in the use of delaying tactics. The combat leader must be able to determine rapidly the size force he has engaged. The time lost in developing the situation may allow the main force to prepare an ambush, occupy defensive positions or escape.

All training situations must stress the importance of gaining and maintaining contact with the enemy. Rapid reporting of intelligence information will permit faster friendly reaction.

K. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Although cross cultural communication has been emphasized in counterinsurgency and military assistance advisor training, the results have been disappointing. The number of US personnel with adequate and useful knowledge of Vietnamese language and culture ranges from limited to virtually non-existent, particularly in tactical units. This limits the

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ability of: US unit commanders to communicate effectively with Vietnamese counterparts; advisors to influence counterparts, and of intelligence personnel to exploit the most profitable sources of intelligence information (i.e., captives, local populace and captured documents).

More US personnel must be trained as experts in Vietnamese language and culture. The use of ARVN interpreters should be considered as being only a stop-gap measure. It should be recognized that the use of the interpreters and translators presently available will result in some degree of misunderstanding when contact is made between US and FVN representatives.

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Section II. Training in Theater.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-26 (RL), dated 16 October 1965.

Incident/Observation(s)

1. "In country training has stressed primarily small unit tactics with emphasis on patrolling for units of company size and smaller. This training has included heliborne assault operations, counterambush and immediate action drills, demolitions, driver training, land navigation and long range patrolling."

2. "About four weeks of acclimatization and training are required for troops to become fully effective in country."

3. "Prior to departure from COMUS, the unit conducted speed marches and PT twice a day to somewhat acclimatize the troops to the conditions they would encounter. This training was effective in that the unit has suffered few losses due to heat exhaustion."

B. 173rd Airborne Brigade, date: 5-9 November 1965.

Incident/Observation(s)

Preparation of landing zones in jungle terrain continues to be a problem. During this operation, it was discovered that personnel with lumberjack experience produce five times the results of inexperienced personnel.

Lesson Learned

A requirement exists for a special team to be organized and trained for LZ preparations. This team should have the necessary equipment and would be on call during operations to rappel from helicopters into the proposed LZ.

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Section III. Joint Operations and Procedures for Airmobile Operations.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-28 (FL), dated 16 October 1965.

1. Incident/Observation

"Helicopter transport has many disadvantages that were not previously apparent. Helicopter units are prohibited by local regulations from landing on an insecure LZ unless the landing is preceded by artillery, armed helicopters and/or TAC air preparation. This, combined with the fact that two or more lifts are usually required, makes a surprise attack very difficult."

Lessons Learned

a. These disadvantages can be overcome to some extent by prestriking several LZs, feinting landing on one and then moving quickly to the primary LZ. Armed helicopters should strike tree lines around the LZ just prior to the landing. Troops must move off the LZ into pre-selected assembly areas so that the second lift can still be preceded by a prestrike on the remainder of the LZ perimeter. Use roads as LZs to change the pattern of using likely LZs in the vicinity of the target area.

b. "Avoid use of white smoke whenever possible since this color is SOP country-wide for marking air strikes on enemy locations. Likewise violet smoke is widely used for marking air med evac landing sites."

2. Incident/Observation(s)

a. "Six observation helicopters are completely inadequate for a brigade. As a minimum, it needs a platoon of 5 slick UH-1 and 3 armed UH-1 helicopters."

b. "Flying time per aircraft per month is 55 hours."

c. "CH-13S helicopters are inadequate as a command and control aircraft where there is no front line."

d. "CH-13S helicopters should all have dual control, no gun kits and be used for artillery observation, Air Force FAC, high reconnaissance and administrative missions."

e. "Each battalion area should have sufficient space to park 6 UH-1 helicopters."

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B. Combat Operations After Action Report (MACV/RCS/J3/J2),  
dated 30 December 1965.

Incident/Observation

"With the advent of increased fire support by US aircraft, it becomes imperative that a fire support coordination element be located at the senior field headquarters controlling any operation. The element must contain both US and GVN personnel with the necessary communications to accomplish the mission."

C. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. "Artillery, TAC air and Army Rocket artillery can be used at the same time without the loss of aircraft or effectiveness. The APA and TAC air flew perpendicular to the artillery gun-target line in these cases where they simultaneously struck the same target areas. Other striking aircraft flew parallel to the gun-target line and beyond it."

Lesson Learned

Extremely close coordination is required between the FAC and the artillery liaison officer to accomplish the above.

2. "The pathfinder team was tremendous. Until they could get in around 1630 hours, 14 November 1965, all incoming aircraft had to be guided in and out by the battalion commander on the battalion command net."

Lesson Learned

A pathfinder team should go into every battalion-sized assault.

3. "The technique of holding a company (-) as an offensive striking force while recon elements of one platoon check specific areas out 50-100 meters from the landing zone worked out very well in this case. Also and most important, the assembled company (-) enables the battalion commander to hit any enemy attack quickly with a controlled unit."

4. "When a unit gets into an objective area, as soon as possible after landing, artillery fires should be brought in. This will possibly kill some PAVN nearby and certainly will cut down time on target when a fire mission on known enemy is called for."

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Incident/Observation(s)

The advanced guard of an Infantry Battalion prematurely triggered a Viet Cong ambush that was established along a road bordered on both sides by a village.

Lessons Learned

1. When attacked along a road and air support is used, it may well force the VC to close on the road for safety. In this case, we killed a lot because we kept command of the road.
2. Air power can give very close support at night if they have something to guide on, such as a road in this case. Helicopters shot 2 to 3 yards off the road and the napalm was about 50 meters.

D. 173rd Airborne Brigade, date: 5-9 November 1965.

Incident/Observation(s)

1. The concept of attaching a FAC team to each infantry battalion to assist the airborne FAC in the control and direction of strike aircraft and to advise the ground commander in the planning and execution of IAC air support is mandatory and has proven exceptionally effective.
2. On occasion it may be necessary to stop everything to carefully adjust artillery and IAC air to place it exactly where it is needed. The fire often must be "walked" to the desired location.
3. Air Force P-43 helicopters can be used effectively, but slowly, to evacuate personnel from jungle areas where no LZ is available. A cable hoist for the UH-1 helicopter is urgently needed.
4. During any extraction, it is imperative to know how many troops remain in the objective area and where they are located. During the conduct of an extraction at night, this becomes ever more important to preclude leaving personnel in the pick-up area and to insure that supporting artillery and air can be brought in close to the perimeter.
5. The difficult problem for the battalion commander after contact is to determine where all his forces are located before committing any more forces to movement or using his heavy fire support. The element in contact must also be given time to develop the situation before the decision is made to maneuver other elements or use the heavy fire support.

Lesson Learned

Whenever the situation cannot be developed without excessive personnel losses, the most effective approach is to break contact, strike the enemy with air and artillery, with an immediate follow-up by friendly maneuvering.

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F. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

Incident/Observation(s)

1. "The crossloading of advance parties of the last two battalions and the artillery battery into the first battalion's lift enabled the orderly arrival of subsequent airlifted elements to their designated positions."

2. "OH-47 helicopters were employed to lift 4.2 mortars and mechanical mule prime movers into the objective area. The terrain in the objective area was impossible to traverse with these loads, therefore, the mortars remained within a few meters of where they were landed for the entire operation. Aerial reconnaissance did not reveal this terrain condition."

Lesson Learned

The introduction of heavy equipment into the LZ should be held in abeyance until an on-the-spot reconnaissance has been made.

3. "The artillery was lifted by OH-47 by sling load from Dien Hoa to Bao Trai on F-Day."

Lesson Learned

"The advantages of sling load rather than internal carry are that the gun crew and ammunition can be carried internally in the same aircraft, and unloading is faster in the objective area thus subjecting the aircraft to minimum exposure."

4. For the extraction of a force by air, UH1 helicopters should be used to rapidly lift the force from the hostile area to a secure area. Chinook helicopters may be used to move the forces from the secure area for the longer haul to the base camp.

Lesson Learned

The Chinook helicopters appear to subject an inappropriately large number of personnel to hostile fire while in the congested area.

5. "It was proposed that we attempt to modify our tactical air ordnance delivery procedures in order to halve the time of LZ preparation and double the amount of ordnance. The time allocated to TAC air preparation is normally thirty minutes. Each flight of three aircraft takes approximately seven and one half minutes to expend. When 10 minutes of artillery preparation and 5 minutes of armed helicopter are added, it amounts to a 45 minute warning to the enemy. We may either move forces into

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the area, or out of the area prior to the landing of the first troop lift. Experiments will be made in future operations to expend ordnance from aircraft flying two or three abreast carrying one type of ordnance instead of the mixed load now carried.

6. Hopscotch Tactics:

a. "A new tactic was practiced with 1/503 Inf, west of the Oriental River, which is designated Hopscotch. The purpose of this tactic is to search out the enemy over a large area, using a minimum expenditure of forces and dominating the area in a short time, through air mobility, violent assault, and surprise."

b. "The procedure was as follows: Three assault elements were organized out of two rifle companies. One force consisted of 144 men while the other two had 72 each. With minimum amount of planning time and the maximum amount of prearranged supporting action each force was able to make assaults by helicopter in separate areas. As each force landed, the helicopters picked up the next force and were able to either reinforce the previously employed element or make an assault in another preselected area."

c. "The sequence of events was as follows: The first element became airborne and flew to a rendezvous point approximately five minutes flying time from the selected LZ. When over this point, the flight leader announced "Skyhook". This started the five minute countdown. The artillery FDC monitoring the flight leader acknowledged the receipt of "Skyhook," which was the signal for the artillery to begin the LZ preparation in volleys for one minute. At the end of the three minute countdown, completion of the artillery firing was indicated by the firing of red smoke in the last volley. Armed helicopters preceded the troop lift by one minute firing on the flanks of the LZ. At the end of 5 minutes the forces were on the ground and troop helicopters departed the area to pick up the next element. By the time the next element was airborne, the airborne command post was able to determine from the committed force whether the enemy situation demanded that the next lift be employed as a reinforcing unit or could be committed in a new location. It was decided that the next lift could be employed in a new location hence the entire sequence of timing was started anew. All three lifts were employed in separate areas. Contact was made in one area, but it soon ceased and reinforcement was not required."

d. "The forces remained employed for a period of three hours and were then extracted."

e. "Tactical air was maintained overhead throughout the entire operation."

Lesson Learned

"These tactics enabled a force of less than 300 men to search and dominate, in approximately four hours, a suspected enemy



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area which would normally have taken a battalion size unit several days. These tactics appear to have much merit in open terrain which affords numerous landing zones; they truly exploit the mobility of the helicopter."

G. Operational Critique, 173d Airborne Brigade, 8 - 14 January 1966.

Incident/Observation(s)

1. "It should be noted that the landings in each of the three battalion areas were completed more rapidly than during former operations. Each lift of 5 elements, consisting of 10 helicopters each, touched down and departed within a total of no more than three minutes."

Lesson Learned

This was made possible by the fact that the elements land in a staggered trail which permits quicker "setting" and quick exiting of the troops.

2. UH1 helicopters should be used to extract forces from an unsecured area to the nearest secured area in order to achieve a quick turn-around. CH-47 helicopters can then pick up the forces from the secured area for the long haul.

3. "It is suggested that when a ground follow-up to a B-52 strike is made, the time of ordnance delivery be greatly compressed. The present time span of delivery and the long pauses between flights enables the enemy to move out of the area or get into deep holes after the initial drop. When a ground force follows a B-52 strike, the mass delivery of CBU's with an immediate follow-up airmobile assault in the proximity of the strike would appear to achieve the optimum surprise and highest probability of success."

H. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

Reconnaissance immediately prior to an airmobile operation should be fitted into the general pattern. Aggressive use should be made of Rangers, Special Forces, reconnaissance companies, pathfinder teams, etc., equipped with superior communications. These units must be used rapidly to probe potential enemy positions and to join definite intelligence with minimum exposure of our own resources. Better and continuous use of aerial photographs should be made."

Section III (continued)

I. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

Experience indicates that troop landings for search and destroy operations should begin, when feasible, on high ground and extend toward blocking forces located at the base of hills. The down movement conserves the strength of personnel and at the same time allows for complete coverage of the terrain. Moreover, this procedure attacks prepared enemy defensive positions in their rear when they are primarily sited to defend against attacks coming up the hill.

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(Section III continued)

J. U. S. Army Vietnam, dated 22 March 1966.

Incident/Observation(s)

The best solution for control of aircraft and artillery is for all units in the landing zone and all aircraft entering or leaving the zone to operate on a common air-ground frequency, controlled by a pathfinder team. Mutual clearance of artillery and aircraft is obtained, and resupply aircraft are directed to their proper holding area. In addition, pilots are gaining confidence in being able to fly under and adjacent to the artillery projectile. During one operation, C Battery fired continuously for almost three hours and maintained continuous fire for one and one-half hours. In addition, the other battery in the area fired during this period. HU-1 and OH-13 helicopters were able to enter and leave the landing zone by careful air control procedures.

Lesson Learned

Utilizing pathfinders with units concerned monitoring the air-ground frequency, optimum artillery fire can be effected without endangering aircraft.

K. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

The use of multiple dummy landing zones to the flanks and rear of enemy positions, with helicopters approaching or even touching down on several but discharging troops only on one landing zone, is frequently effective in deceiving the VC as to the intent and actual location of our assaulting forces. The VC will sometimes abandon prepared positions when faced with this tactic, and then become vulnerable to preplanned artillery and air strikes directed at them, and on their escape routes. The use of this same tactic is also useful in the infiltration of long range patrols and helps insure clandestine entry into the patrol areas.

Deceptive tactics with helicopters enhance the security of airmobile operations, increase chances of success and help gain surprise.

L. MACV, dated 15 March 1966.

Incident/Observation(s)

Operational experience over the past three years in the RVN indicates that the best general concept of employment of armed helicopters in support of airmobile operations calls for two fire teams to provide

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suppressive fire in and adjacent to the LZ. Each fire team should consist of at least two and no more than three armed helicopters. The best ratio of armed helicopters to lift helicopters varies with the mission and the size of the lift formation, but the number of fire teams on station at a given time remains relatively constant at 2 per LZ regardless of the size of the lift formation. Best control of the mix depends upon the location of the units, the type and size of airmobile operation being conducted and whether US or ARVN forces are being supported.

In addition to the above:

a. Airmobile operations should employ a minimum of two light fire teams on station (LZ) with one additional armed helicopter used as a command and control helicopter and to provide additional fire support for either of the fire teams. To provide this support there must be five mission-ready helicopters available at all times.

b. The 5 armed helicopters can adequately support up to 20 lift helicopters which are operating in a close formation into 1 LZ. This provides a mix of armed and lift helicopters of 1:4 which experience has shown to be the best mix for large airmobile operations. The mix of 1:4 considers only the fire support required in and around the LZ during troop lift operations.

c. The mix of armed and lift helicopters should be provided at company level for the separate battalion through assignment or attachment of one armed platoon of sufficient size to provide five mission-ready armed helicopters/crews to the lift company. One additional armed platoon should be assigned to the battalion and be under direct control of the battalion commander.

d. The mix of armed and lift helicopters should be controlled at battalion level for divisional battalions where the companies are closely located in the same general area. This battalion should have an armed company of sufficient size to provide the mix of 1:4 for troop lift while retaining one platoon as a reserve force for commitment as specific tactical situations may dictate.

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Section III (continued)

M. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Units unable to extract serious battle and non-battle casualties due to the non availability of LZs.

Lesson Learned

Winch extraction of battle or non-battle casualties, as well as prisoners from otherwise inaccessible terrain is feasible. A corollary advantage is the morale effect for the troops to know that such an extraction means is available.

When operating in areas where LZs are not available, an H-43 rescue helicopter should be attached or available in direct support.

2. Incident/Observation(s)

Air and artillery preparation of helicopter LZs indicated to the enemy our intention of utilizing a particular LZ. The preparation affords him time to evacuate the area or conversely to establish an ambush on the periphery of the prepped area.

Lesson Learned

Battalion night helicopter assaults into a secured LZ are feasible and desirable. Without the conventional preparation to alert VC forces in the area, the VC cannot react quickly enough to impede the helicopter assault.

N. 173d Airborne Brigade (Operation SILVER CITY), dated 15 April 1966.

Incident/Observation(s)

The extraction from an area of operations should be done with the least amount of change to the established daily routine as possible to prevent the VC from becoming aware of the operation and using it to his advantage.

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Section IV. Enemy Tactics.

A. Inclosure 1 to Letter AVCG1-T, subject. Lessons Learned, 1 October - 30 November 1965.

Lessons Learned

1. The Viet Cong tends to operate primarily near villages and roads. Harboring sites in remote areas are normally close to fresh water.

2. PAVN mortar firing is generally used only in front of their route of attack and frequently in a creeping pattern. This tends to pinpoint their route of attack.

3. Combat Operations After Action Report (CAO/RCS/J3/J2), dated 30 December 1965.

Incident/Observation

An analysis of actions around various Special Forces Camps indicates that the VC uses the tactic of harassing a camp with minimum forces in order to mount an attack against any friendly relief forces.

Lessons Learned

That other Special Forces Camps in Vietnam be thoroughly evaluated concerning the possibility of VC attack for the specific purpose of ambushing a relief column. Those in position where access routes are limited and only a ground force could render adequate relief - - should be moved.

C. Commander's Combat Note Number 90, dated 10 January 1966.

Incident/Observation

The Viet Cong are reluctant to break contact with US Forces during daylight even though they have sustained heavy losses. They tend to keep as close as possible to the US troops, knowing that they will receive less fire from mortars, artillery and the air.

1. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. A favorite tactic of the PAVN enemy we faced seemed to be an aggressive small-unit encircling maneuver. Another was a rapid assault by 6-10 PAVN on 2 or 3 friendly.

2. When wounded, he continued fighting with his small arms and grenades. He appeared fanatical when wounded and had to be approached with extreme care. Many friendly were shot by wounded PAVN.

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3. When attacking, the PAVN units confronting us used mass assault tactics preceded in some cases by light mortar and anti-tank rocket fire. The latter, I believe, is often mistaken for mortar fire. They also used encircling maneuvers with 50-75 man groups. He was expert at probing our defensive perimeter at night and went to great efforts to try to force friendly units into firing.

4. We must make imaginative and constant use of our tremendous fire support advantage to kill the PAVN enemy before he gets so close that we must fight him on his terms. This includes heavy use of the 1-79 and even hand grenades to hold him out so that artillery, TAC Air and Army Rocket Artillery can work on him.

E. Letter, MACJ343, MACV, subject, "Lessons Learned, No. 54: The Battle of Ky Phu (U)," dated 27 January 1966.

Incident/Observation

Essentially this action was a movement to contact culminated by a VC ambush designed to destroy the entire Marine march column.

During this action, three separate engagements occurred: The initial attack on the advance guard, the attempt to encircle and destroy h/S Co; and the attack on the rear guard. All these attacks were effectively foiled by aggressive leadership, rapid and effective response to orders, fire power, and use of supporting arms, resulting in severe losses being inflicted on the attacking VC forces.

Lessons Learned

"Of particular note as a result of this action are two techniques employed by the VC to increase the effectiveness of their ambush.

1. "VC units attacked the center of the column from positions previously traversed by the flank security elements of the advance guard, moving into these positions during the time and space interval between the flankers of the advance and rear guards (estimated as 30-45 minutes). Flank security for main body elements was limited to areas in close proximity to the route of march.

2. "Initial enemy fire was directed against commanders and radio operators, resulting in the loss of one company commander and nine radio operators (three killed and six wounded), and destruction of three radios."

F. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "The VC unit conducting the night attack will often break off the attack and stop firing. If the friendly units stop firing

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at that time also, the VC uses the lull in the battle to his advantage to slip out to the friendly lines to recover dead, wounded and weapons. Therefore, continued small arms, automatic weapons and supporting harassing fires should saturate the battlefield and along likely routes of withdrawal to obtain the maximum amount of enemy casualties as he attempts to police the battlefield.

Lesson Learned

That units must continue the pursuit by fire after the enemy has broken off the attack at night.

2. On the few occasions that AT type mines have been discovered, we have yet to encounter a mixed field. When AT mines are employed, they are placed exclusively on roads and trails capable of carrying vehicular type traffic. AP type mines are employed, however, on the defensible terrain nearby, so that infantrymen taking to the high ground to protect a disabled vehicle are then subjected to the AP mines and booby trap devices.

Lesson Learned

Stress the requirement for constant vigilance against AP mines and booby traps on nearby trails and defensible terrain whenever AT mines are encountered.



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Section IV (continued)

G. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

A marked difference between PAVN and VC fighting was observed during recent operations in the Chu Pong and Ia Trang areas. The PAVN units are better equipped and trained and fought tenaciously in the face of overwhelming US firepower. In contrast with local VC units, the PAVN pressed the attack, becoming decisively engaged and disengaged only after taking severe losses. PAVN units attempt to employ "close embrace" tactics to prevent our use of supporting fires. An attacking unit must be careful to keep PAVN units at arms length because once a unit is involved in "close embrace," attempts to draw back to place supporting fires on the enemy are frequently met by the enemy's following immediately as the friendly forces draw back.

H. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. The Viet Cong employ several types of markers for the purposes of providing directions for Viet Cong units to follow, or to mark routes for an attack. Also employed are markers to aid firing into a pre-determined area or installation. By aligning a weapon with the preposition marker, it is possible to fire fairly accurately in the dark. When such markers have been removed, Viet Cong firing incidents have ceased or decreased.

Lesson Learned

a. Maintain a loose-leaf type manual with photos and sketches kept up to date on new Viet Cong techniques.

b. Units conduct frequent patrols around the outside of perimeters to remove and destroy markers, recording the location, direction and estimated range to each possible target and indicating the nature of each target.

2. Several instances have been reported when Marines in close pursuit of Viet Cong have been distracted by the enemy dropping his pack on the trail. Most Marines, it has been learned, will stop to inspect the contents of the pack before pursuing the Viet Cong further. In the meantime, the Viet Cong has made his escape with the time gained, while the Marine is inspecting the discarded Viet Cong pack.

3. The VC have used the tactic of following a force of Marines back to a landing zone. After the majority of Marines have been lifted out, the VC either attack the remaining Marines or fire on the helicopters as they return for the last lift.

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I. 173d Airborne Brigade - MAKAUTER I, dated 24 February 1966.

1. Several new VC tactics were encountered during this operation:

a. VC forces in the area used a small ground to air missile on at least two occasions.

b. When forced to leave his positions, the VC attempted to burn his installations, supplies and documents which could not be carried.

c. The reluctance of the Viet Cong to break contact with brigade forces during daylight hours, even though he sustained heavy losses from the brigade's superior firepower. It appears that he knows that losses would be devastating if an attempt to withdraw was made during daylight.

d. Intelligence information indicated the VC Main Force units operating in the AO were forced to break up into numerous small elements in an effort to avoid detection by brigade elements.

J. United States Army Vietnam, dated 24 November 1965.

Incident/Observation(s)

1. The most common type of mines and booby traps thus far encountered is that utilizing a Chi Com hand grenade. These grenades have been used effectively and ingeniously in every area. The following are the more common means of employment.

a. In VC controlled or well-infiltrated areas, these grenades are buried in well-travelled areas and detonated electrically. Thus, they can be controlled so that local people can walk back and forth over the booby trap. When enemy troops are in proper position and local people safely distant, VC or VC sympathizers detonate the booby trap. Long lead wires allow the person detonating the device to be well clear of the area at the time of detonation or immediately thereafter. The grenades are sometimes buried in groups, producing the same effect as anti-personnel mines.

b. Most often VC traps employ a pull type friction fuze consisting of a crooked wire imbedded in phosphorus. The fuze is connected to monofilament line or camouflaged nylon thread or even vines, which are used for trip wires. The friction produced by the wire ignites the phosphorus, detonating the grenade.

c. Booby traps have most often been found at grave yards, gates, in booby trapped panji pits around helicopter landing zones, and on paths leading to and from unsecured hamlets.

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d. In addition to explosive devices, many non-explosive devices are employed, the most effective being panji pits. The most common panji pit is about four feet square and about four feet deep. Panji stakes (sharpened bamboo) about six to eighteen inches long are placed upright in the pit. There are about six or eight stakes in the average pit.

2. There are indications that the VC have a special way of marking the panji traps so that other VC, and sympathizers, can stay out of them. There are two ways that Marines have observed. In the first case the pits are marked by placing a bamboo bonnet, much like the bonnet of a minefield marker kit, over the pit. The bonnet is made of split bamboo and tied in the proper shape.

Another method is to use a large palm leaf, split the leaf, then place the split leaf on the deck with the end touching the panji pit. These markings have only been observed on the small, foot-size holes. The method for marking larger holes is undetermined.

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Section IV (continued)

K. After Action Report, 2d Battalion, 27th Infantry, 25th Division, dated 8 February 1966.

Incident/Observation(s)

1. VC use large tunnel systems as a mode of travel, hospitals and/or storage areas. Unless this tunnel complex is located and destroyed as a unit moves forward, the VC is capable of employing forces at any time in multiple locations to the flanks and rear of friendly elements with relative ease. Thorough search of these tunnels prior to destruction is the only assurance for locating and destroying all exit/entrances.

2. Experience has proven that valuable documents and other miscellaneous papers are often stored in the tunnels.

3. VC dead and wounded are evacuated quickly and mysteriously from the battlefield via these tunnel systems. Graves within tunnels are common.

4. The tunnels are seldom booby trapped.

5. Experience indicates a strong possibility that tunnel networks are being used to move small vehicles from place to place under ground.

6. Firing pits and bunkers close by tunnel networks are mutually supporting and are generally arranged in a triangular system. Firing apertures are extremely small and almost impossible to detect.

7. Long tunnel entrances/exits are normally in densely wooded areas while short ones are close by to hamlets, roads and trails.

8. Graves in tunnels are usually cut into the tunnel wall and sealed with a makeshift bamboo door and packed mud.

L. Operation PARDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

The VC appear to be using high airbursts to register their mortars and are capable of placing well-aimed indirect fire anywhere in sector without apparent pre-registration.

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M. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

The principle of defense through offensive operations proved highly successful.

Lesson Learned

In the course of a Brigade operation, the frequent use of company and battalion size actions, in addition to saturation patrolling by platoon and squad size elements, effectively dominates large areas and denies the enemy any opportunity to operate therein without being detected and destroyed. Changes in defensive positions, a diversity of offensive operations and prompt, aggressive reaction with "Hawk Flights" can keep the enemy off balance to such an extent that no coordinated attacks are possible.

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Section IV (continued)

M. 1st Brigade, 1st Airborne Division, Operation  
HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Local Viet Cong units do not move completely out of the area of operations, but rather move ahead of and behind our units, keeping them under constant surveillance. As a result, stay-behind patrols, ambushes and the unexpected return to areas covered one to two days earlier proved quite effective in surprising the enemy.

Viet Cong, particularly local platoons and companies, generally remain in areas where water is readily available and use existing trail systems. They utilize high ground and dense foliage only when closely pursued.

2. Incident/Observation(s)

VC forces, when found, will usually defend the mountainous valleys. They carefully select positions which include the slopes, natural caves, overhangs, etc. and present a formidable defense. Several units have sustained casualties while engaging a VC force, so entrenched, with enemy casualties usually unknown. The rocks and caves limit the effect of supporting fires, air and artillery and also organic fires.

This battalion had considerable success when it traversed exceedingly difficult terrain and moved from the end of the valley, toward its mouth, keeping flank security on the slopes of the valley. This direction of advance caught the VC completely by surprise, caught several in the open and confused and blocked their line of retreat. As a result, in one engagement we killed 12 VC while they inflicted no friendly casualties. On another occasion we killed 2 of 4 unsuspecting VC, again with no friendly casualties.

Lesson Learned

VC forces tend to be careless in areas they consider safe. Approaching from an unexpected direction reaps dividends.

3. Incident/Observation(s)

Movement along stream beds is not advisable at dusk. This is the time when the enemy moves to these areas to prepare rations and to replenish his water supply for the following day. On the other hand, this fact can be used to advantage for observation of the enemy by patrols or for strikes by air and artillery.

Observations indicate that small armed enemy groups enter the villages at dusk and move out at dawn. These are most probably local ambush parties and trail watchers who stay in the villages during

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the hours of darkness. Knowledge of this fact could be used advantageously to attack such villages at night while the fighting men are assembled.

O. 173d Airborne Brigade (1 October 1965-31 December 1965), dated 14 March 1966.

1. Incident/Observation(s)

A new VC tactic of employing mines thirty to forty feet to the sides of roads was encountered by this brigade. It is felt that this is a VC counter measure against ground troops who normally move along the sides of the road or to its flanks.

2. Incident/Observation(s)

Another new VC tactic observed during Operation Smash (17-22 December 1965). After contact was made with a VC battalion in well-prepared positions, US forces were pulled back to allow friendly air and artillery fires to be placed on the forward VC positions. VC forces, utilizing a "hugging tactic," left their positions and followed the US forces to reduce effectiveness of friendly supporting fires.

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Section V. Basic Tactics - Friendly Forces.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGFC-23 (RL), dated 16 October 1965.

Incident/Observation(s)

1. "This is a company commanders' and platoon leaders' war. Even brigade-sized operations ultimately break down to semi-independent company and platoon-sized actions. Platoon leaders are required to act far more independently than in a 'conventional' war."

2. "APCs can be used to break trail in dense jungle areas. Troops move in single file behind trail-breaking APC. Infantry on foot provide flank security between APCs. APCs can also be used to break a clearing quickly to permit med evac by helicopter."

3. Armored vests are useful for static defensive operations, riding in helicopters and vehicles, but are too hot and too heavy to be worn on offensive foot mobile operations.

2. Inclosure 1 to Letter, AVCGT-T, Subject: Lessons Learned, 1 October - 30 November 1965.

Lessons Learned

1. Buddy Teams. Many casualties have been caused by punji stakes, snipers and booby traps. If men operate in two-man "Buddy Teams," casualties are reduced. One man watches for punji stakes and booby traps while his buddy searches the trees and the area to the front for snipers.

2. Counter Sniper Actions. One unit achieved considerable success in combating snipers in trees by systematically spraying all trees to their front with automatic fire on a given signal at first light. The process must be deliberate and controlled. Squads and platoons must be given a sector of the perimeter. Random fire must never be allowed.

3. Stay Behind Forces. On several occasions when a US unit left an area, the VC returned to reoccupy the area or search for discarded American equipment. There have been occasions where well-camouflaged US stay behind units have been successful in ambushing returning VC forces. When a stay behind force cannot be used, aerial surveillance and M and I fires have caused casualties to the VC when they reentered the area.

4. Standard Procedures. Operations conducted to date have demonstrated the importance of standard SOPs, SOIs and training with standard procedures; any battalion can work under any brigade, and a company can work when attached to any battalion. This has proved to be

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particularly valuable in air assault operations since every unit not engaged is, in effect, a possible reserve for every other unit.

C. AVCCG Counter Ambush Techniques, Headquarters 1st Air Cav Division, dated 1 December 1965.

Extract from the Orders of a Senior Commander.

1. Motor Movements.

a. Requirements for individual vehicles carrying personnel include:

(1) Floors of 1/4 ton vehicles will be sandbagged or given equivalent protection to reduce casualties from VC use of mines.

(2) Vehicle commanders are responsible for designating passengers as sentinels to provide observation in all directions.

(3) Canvas and bows will be removed from all vehicles transporting troops.

(4) Troops will be seated or positioned and equipment loaded so that all personnel can return fire immediately if ambushed. Individual weapons will have magazines inserted; a round chambered and SAFETY ON. 160 machine guns employed hand held in the cargo compartment of 3/4 ton and larger trucks will be loaded with SAFETY ON. 160 MGs on pedestal mounts will be loaded and set on "FIRE." Caliber 50 MGs on pedestal or truck ring mounts will be full LOADED.

(5) The following procedures are recommended for 2 1/2 ton and larger cargo vehicles transporting troops:

(a) The vehicle commander should be positioned in the cargo compartment.

(b) The truck bed should be sandbagged, and if possible, the sides should be protected by modular armor plates.

(c) Expedient seats arranged to place troops in the center of the vehicle facing outward is desirable. When this cannot be accomplished, troops seated along the side seats should face "half left" or "half right" with weapons in a vertical position resting on the seat.

(6) Action of vehicles when subjected to ambush fire:

(a) Vehicles in the immediate killing zone should attempt to drive through with all personnel returning fire. If

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the road is blocked, vehicles will pull off to alternate sides of the road, and troops will fire from the cargo compartment until other personnel have detrucked, and then these personnel will detruck and join in the assault. If ambush fire is received from one side of the road only, troops on the side facing the ambush will remain in position and fire until personnel on the opposite side have detrucked and begun to assault.

(b) Vehicles not in the killing zone will halt by pulling to alternate sides of the road, and troops will detruck and attack toward the ambush site. Commanders located in portions of the convoy not under attack will use radio communication to obtain artillery or aerial fire support and report the ambush to the appropriate higher headquarters of the unit responsible for security of the sector in which the ambush occurred.

2. Airmobile Operations.

Commanders of ground and aviation units must remember that airmobile assault forces are as vulnerable to ambush as forces moving by foot or motor convoys. Habitual use of the same staging areas, flight routes, and landing zones establishes a pattern that enables the VC to choose the time and place of ambush. Aviation unit commanders must learn to recognize potential ambush sites - e.g., the only open field in a large area of otherwise dense jungle, the approach into an LZ that lies between close ridge lines, the LZ in close proximity to a force that is engaging the enemy. These are but a few examples of potential ambush sites for airmobile forces. Application of the following proven air assault techniques will greatly reduce the possibility of major losses due to VC ambush of airmobile forces:

a. Aggressive aerial surveillance and use of ground security elements during staging operations.

b. Variation of flight routes and altitudes and provision of armed escort aircraft enroute.

c. Use of air cavalry and pathfinders plus the use or ready availability of the USAF Tac Air - airmobile artillery - armed helicopter team in support of airmobile assaults.

D. Commander's Combat Note Number 90, dated 13 January 1966.

Incident/Observations

1. The helicopter as a troop lift vehicle enables a relatively small number of Infantry units to cover an extensive area. However, once the soldier lands on the ground, he moves only as fast as the ground and his physical condition allow him to move.

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Section IV (continued)

P. 1st Brigade, 101st Airborne Division, 15 February 1967,  
After Action Report, Operation PICKETT.

Lessons Learned

The following are some of the more important lessons learned by this unit during Operation PICKETT:

1. Experience gained during Operation PICKETT still supports the previous conclusions that NVA forces do not employ mines or booby traps. However, this type of activity encountered during the operation indicates that they are not only employed by VC guerrillas, but by VC Main Force Units.

2. Numerous campsites and base camps were discovered in bamboo thickets along stream beds. These were not discernable from the air. However, by comparing ground inspection with air observation of these areas, air observers were able to realize where potential base camps may exist. Since bamboo may be bent to provide overhead concealment, and streams provide a source of water, those areas where streams run through bamboo thickets should be considered as potential targets for troop deployment or H&I fires.

3. A ground check of several base camps located in the area indicates that as few as three cooking fires may be sufficient to provide cooking facilities for a battalion size camp. In order to facilitate identifications of possible enemy locations, it is important that records of past infrared missions be furnished the brigade in the early planning stages of an operation.

4. In the PICKETT AO, it became evident that the enemy fled to high ground once friendly troops were introduced into the area. Base camps and campsites were left hastily.

5. It has been noted that in the Kontum area, the enemy digs in on the military crest of a hill with a high speed escape route close by. The escape route does not run to the rear of his position, but invariably to the flanks.

Q. ACSFOR, Department of Army, 1 July 1966, Operations Report -  
Lessons Learned 6-66, Lessons Learned Viet-Nam--1966.

1. Lesson Learned

The VC take advantage of our kill-emphasis by employing deception techniques such as deliberate exposure at far distances, prolonged

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sniper fire from a position, or open smoke fire to bait patrols into ambushes, crossfires and booby trapped areas, or to steer them away from established base camps or other guerrilla facilities.

2. Lesson Learned

The Viet Cong often fire their mortars at friendly positions when these units are firing their indirect weapons. This makes counter-mortar radar detection difficult and causes confusion, sometimes leading to a cease fire by friendly elements in order to investigate the possibility of short rounds having been fired by friendly weapons. This practice should be carefully explained to all personnel so as to maintain confidence in our indirect weapons.

3. Lesson Learned

Red markings on Viet Cong grenades, mines, etc. indicate that the ordnance is booby trapped. Normally they use an instant fuze that prevents one from getting far enough away before it explodes; therefore, such ordnance should be destroyed in place.

4. Lesson Learned

Immediate reaction to sniper fire must be characterized by violence - a rapid return of a heavy volume of fire and fast movement. Fire control seems to work best with about one-third of the fire directed into trees and two-thirds on the ground. The M-79 is excellent for use against likely targets in trees. In dense tree growths, grenadiers must realize that rounds do not arm if they hit branches immediately after being fired.

R. 199th Infantry Brigade, 17 February 1967, Operational Report - Lessons Learned 1 Nov 66 - 31 Jan 67.

Incident/Observation

Examination of the personal effects of VC KIA disclosed a common oddity. The presence of one-piaster notes appeared to bear significance. (It is to be noted that the one-piaster note is uncommon to the Vietnamese economy.) Upon querying local GVN officials, it was learned that the VC use the one-piaster note as a symbol of identification among themselves. Therefore, interrogate thoroughly any suspect found to possess a GVN one-piaster note. It may be the only critical clue to his/her true VC identity.

S. 1st Brigade, 101st Airborne Division, 3 January 1967, Combat Operations After Action Report, Operation GERONIMO I.

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Lesson Learned

The NVA soldier is unusually liberal in his response to interrogation. If knowledgeable, he is more likely to provide good intelligence than not. This is true of both officers and enlisted. They have no apparent feel for a "code of conduct" and will often provide good raw intelligence.

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Section V (continued)

AA. 1st Brigade, 101st Airborne Division, 15 February 1967,  
After Action Report, Operation PICKETT.

Lesson Learned

The construction and use of dummy foxholes proved effective in deceiving the enemy as to the true location of a perimeter. On one occasion several grenades were thrown into the vicinity of dummy foxholes. Had it been the actual emplacement, casualties would undoubtedly have resulted.

BB. Marine Corps Bulletin 3480, 4 January 1967, Professional Knowledge Gained from Operational Experience in the Republic of Vietnam.

Incident/Observation

Patrol reports from Vietnam have drawn attention to a technique used by the Viet Cong to determine the size and composition of patrols. Local villagers are used to count the number of men in a patrol both on departing and entering friendly positions; the direction of the patrol's movement is also reported. When the patrol size is reduced during the course of a patrol, the VC deduce that an ambush party has been positioned somewhere along the route.

A technique has been devised to make it more difficult for the enemy to notice if patrol elements have been dropped off at some intermediate position. First, the ambush party is dispersed throughout the larger patrol; the ambush element keeps its radio antenna detached and is equipped and armed similar to other patrol members. The party detaches itself covertly from the patrol when in the desired ambush site. Since many ambushes are positioned after sundown, the darkness and surrounding foliage hide their maneuver from enemy observation. The next day another patrol can drop off a different element and pick up the other ambush party. Except for the first time, the patrol size remains constant. The old ambush party may move to an OP, and the pickup patrol can force the enemy into open ground or toward the OP site where they can be brought under fire.

CC. 1st Brigade, 101st Airborne Division, Operational Report for Quarterly Period Ending 31 January 1967.

Incident/Observation

The enemy often finds it easy to ignore surrender appeals made from aircraft because the aircraft is hidden from view, and the thick foliage tends to interfere with transmission. However, when a ground mounted loudspeaker is used, the jungle canopy appears to contain

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the sound and extend the range. At the same time, a more personal touch can be added by a trained broadcaster right on the spot or by prisoners who have been properly briefed and encouraged.

Lesson Learned

A loudspeaker team on the ground is more responsive to any change in the psychological warfare picture and can reinforce the efforts of the Infantry commander.

DD. 199th Infantry Brigade, 13 January 1967, Combat Notes 1-67.

Incident/Observation

We are testing a remote control light for use on perimeters and ambushes. When it is properly placed, the light normally gives a quick source of illumination for investigating movement. This quick light is for searching suspected areas of movement and highlighting any targets that might exist. Illuminating 81 and 105 rounds and trip flares are all good and available, but they give some warning which is enough time for an enemy to take cover. Remote control lights are hard to hit at night.

EE. 17th Military History Detachment, 1st Infantry Division, 13 January 1967.

1. Incident/Observation

Effectiveness of mobile interrogation teams. The use of mobile interrogation teams during seal and search operations has caused the indigenous population to volunteer significant information concerning VC activity in the area. Once the seal and search of the village is complete, mobile interrogation teams should re-enter the area in an effort to gain voluntary information from civilians. During these interviews, IPW teams should attempt to reward all persons entering the van on a voluntary basis with an appropriate gift. If significant information can be confirmed, the person is rewarded substantially.

Lesson Learned

Mobile interrogation teams should be utilized to gain information from sympathetic civilians. They should be interviewed rather than interrogated. The teams should be combined Vietnamese and US, and the number of teams should be tailored to the population figures.

2. Incident/Observation

A tractor-drawn single tooth rooter has been found to be very efficient in cutting and/or uncovering the detonating wires to command mines. A tractor-drawn rooter should be operated on each side of

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the road to be cleared. The tractor should be preceded by a buttoned-up tank for security and for detonating any AP mines that may be in the path of rooting. The rooters are operated anywhere from five to fifty meters off the road shoulders depending upon the terrain encountered. In an effort to combat this technique, the VC have at times placed Claymores 20 to 30 meters off the road. Every effort should be made to root at least 20 meters away from the road, and if the terrain permits, 30 to 40 meters off the road. The roter is able to cut 24 inches below the surface of the ground, which is usually a sufficient depth to cut or uncover all detonating wires laid by the VC. This method has been used quite frequently by the 1st Engineer Battalion and has proven very successful.

Lesson Learned

Tractor-drawn rooters should be used on all road clearing operations if at all possible.

3. Incident/Observation

From experience, an engineer battalion has come up with a specific procedure to be used in the neutralization of command mines. The following procedure has proved very successful:

a. Locate command wires leading to the mine either visually or by use of a roter. If a mine is detected with a detector or probes, immediately search for lead wires.

b. Cut the command wires.

c. Move all but one man at least 100 meters from the mine area.

d. One man attach firing wire to wires leading into the road, being careful not to disturb the wire or pull it; move to a safe position and try to fire the mine electrically. Remember always that booby traps may be present.

e. If the mine does not detonate, sweep along the wire (one man only) toward the road and blow any suspected mine or booby trap locations. If unable to locate the mine, set a row of charges on the road and blow them all.

f. After the mine has been detonated, carefully attach a piece of wire or rope to the end of the wires leading away from the road. If an APC is available, use it to pull the wire out with all exposed personnel moved back to a safe area. If no APC is available, play out the wire or rope you have attached to the firing wires and pull by hand at a safe distance away. Do not pull directly on the wires or probe around the wires. This same procedure may be used for wires leading into the road.

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g. If unable to pull the wire out completely, get an armored vehicle to run down the wire to its end.

FF. USMACV, 27 January 1967, Salient Lessons Learned.

Incident/Observation

Defense against mortar/recoilless rifle attacks. VC successes in launching mortar and recoilless rifle attacks, though limited in total effect, have been sufficient to encourage similar efforts in the future. The ability of friendly elements to counter enemy attacks effectively will be enhanced by the application of sound tactics based on lessons learned from previous attacks. Although it is recognized that a 100% effective defense against mortar and recoilless rifle cannot be established, the following general guidelines based on the latest lessons learned can be used to minimize the effects of enemy attacks:

1. Friendly elements must realize that the enemy is very methodical and plans his attacks with precision. Normally he employs mortars and recoilless rifles at night from positions that enable him to fire for effect along the long axis of an airfield at pre-selected targets.

2. To spoil an attack, an effective internal passive defense plan and an external plan which includes aggressive patrol action beyond the range limits of enemy weapons are essential.

3. In one attack, an AN/MPQ-4A radar detected incoming mortar rounds, and friendly artillery engaged the mortars within minutes. Experience from other attacks has shown that the initiation of counter-mortar fire will silence the enemy mortar attack, even if the precise location of the enemy's mortar location is not known. When a friendly unit receives enemy mortar rounds, it is imperative that the direction from which the rounds are being fired be sent to the firing battery so that countermortar fire can begin immediately.

4. The response by ground reaction troops to a recent attack of a major air base was most effective because a reaction force moved quickly to the area of VC infiltration and established blocking positions, thus interdicting the route of escape.

5. In some instances, evidence indicates that application of lessons learned was disregarded. The enemy was allowed to employ the same route used in a previous attack, even though it was an obvious axis of advance from a suspected VC area. To approach the fence surrounding the installation, the enemy moved through a mine field along trails made by animals. At another installation, the enemy used the hours of darkness before 2200 hours each night because they seldom attacked prior to that time.

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6. Enemy mortar/recoilless rifle attacks seldom last more than 20 minutes. Therefore, time is of the essence in their detection. Constant surveillance by aerial and ground means and the use of electronic devices will enable defense elements to detect enemy fire immediately. Once it is detected, immediate deployment of armed aircraft, artillery and flareships will force the enemy to cease fire and withdraw. Immediate airmobile reaction by a ground force to preselected ambush positions along the likely route of withdrawal may punish the attackers severely.

GG. 25th Infantry Division, 30 August 1966, Operational Report for Quarter Ending 31 July 1966.

Incident/Observation

To adequately counter a mortar attack requires a plan that will achieve wide coverage. A small volume of fire on many locations is preferable to a large volume of fire on a small number of locations. This can best be achieved by laying artillery by platoons on preplanned targets. 4.2-inch and 81mm mortars can be profitably integrated into early counter-mortar fires. In the event an attack is mounted, all tubes fire fuze VT at likely locations. As the situation develops and hostile positions are detected, the volume of fire in these areas is increased. Counterfire planning must take into consideration possible enemy withdrawal routes.

Lesson Learned

Countermortar plans should provide for instant broad coverage in the initial phase of a hostile mortar attack.

HH. 199th Infantry Brigade, 27 February 1967, Conduct of Ambushes During Operation FAIRFAX.

Incident/Observation

Technique of fire used in conduct of ambushes. The method of fire in initial contact varies. Two effective primary methods are:

1. At a given signal, all weapons open fire at the same time, all firing full automatic fire. The advantages of this method are that it enables the patrol to gain early fire superiority, inflict maximum casualties upon the enemy and cause confusion and demoralization of the enemy force. Some disadvantages are that most troops tend to place one or two initial rounds in the target area and fire the rest high, over the target, when using full automatic fire, and all of the M-16's run out of ammunition at the same time, causing a lull in firepower which gives the enemy time to escape.

2. At a given signal, the riflemen open fire along with the automatic weapons, but keep their selector switch of the M-16 in the

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SEMI position, placing well aimed shots at selected targets. The advantages of this method are that the individual can hold his fire on the target and reduce the tendency to fire high, and it reduces the possibility that all weapons will expend their ammunition at the same time. The disadvantages of this method are that the enemy may be able to gain fire superiority and extract himself from the ambush because it is extremely difficult to see and hit a moving target on a dark night, using single shots.

II. 25th Infantry Division, 30 August 1966, Operational Report for Quarterly Period Ending 31 July 1966.

1. Incident/Observation

CS Seeding of Woods.

a. The mission of the Division Chemical Section was to seed an area along the road through a large woods with Riot Control Agent CS.

b. The mission was carried out in the following manner:

(1) The CS was to be dispersed in package form from four M113 APC's.

(2) Two 8 pound bags of CS were tied together with heavy twine forming a 16 pound package of CS. A blasting cap with 1/4 pound of C-4 and a 45-second time fuze were used to explode the bags. The blasting caps, time fuze and fuze lighters were carried in a separate APC from the C-4. Upon arrival at the target area, the detonators were assembled and placed between the CS bags; a piece of tape was used to secure the charges.

(3) The APC's were lined up four abreast at 50 meter intervals. The platoon leader acted as controller for the drop. One package was to be dropped from each of the APC's every 50 meters, the command to drop being given by the platoon leader.

(4) At the command, drop, one man in each APC held the package while a second man pulled the fuze lighter pin. The first man then dropped the armed package out the ramp door of the APC.

c. This method of dispersing CS proved to be very effective. By this method, large areas can be seeded in short periods of time, and use of the APC affords personnel a great deal of protection.

2. Incident/Observation

Experience has proven that close adjustment with shell HE is dangerous. Maneuver elements often mistake their true location on the

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ground, and maps in some areas have been found to be inaccurate. Firing with WP on initial rounds reduces the probability of friendly casualties and allows air and ground observers to quickly spot their rounds. If HE is to be fired for effect, it is advisable to complete the adjustment with HE since weight difference between projectiles (WP vs HE) will normally cause HE to fire as much as 75 meters beyond WP. Adjustment with WP is also necessary when adjusting in dense vegetation. The use of WP during periods of unfavorable humidity and wind conditions should be controlled to prevent limiting visibility.

Lesson Learned

The use of WP in adjustments should be included in SOP's, and FO's should be specifically trained on its use.

3. Incident/Observation

"Digging in" becomes impractical in many areas during the monsoon season. Adequate protection requires that bunkers be constructed above the surface. When loading for a move, consideration must be given to space allocation for shoring and bunker construction materials.

4. Incident/Observation

During search and destroy operations, two techniques may be used: The first method has the APC's on line with the Infantry mounted. A mounted sweep through the area is conducted followed by a second sweep dismounted. During the second sweep, the Infantry and the scouts dismount and search individual huts, tunnels and other hiding places. Each suspect area is thoroughly cleared and/or destroyed before moving to the next location. In the second method, the tracks are again placed on line, but they move forward at the pace of the Infantry in a manner similar to that for operations in built-up areas. The Infantry and scouts who are dismounted ferret out the enemy as the sweep moves forward.

Lesson Learned

Of the two techniques, the former seems more satisfactory. This method costs fewer lives because of the armor protection against mines and booby traps. The initial sweep provides a valuable reconnaissance of the area. This permits a concentration of Infantry effort during the dismounted search, the time-consuming phase of search and destroy operations.

5. Incident/Observation

The use of attached personnel carriers on S&D operations as well as pacification operations has greatly enhanced the ability of a dismounted Infantry battalion to rapidly close with and destroy the enemy. When an Infantry battalion has attached personnel carriers, its movement is

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not as vulnerable to a few well-positioned, well-camouflaged enemy riflemen. Valuable time is often lost determining the location of snipers. When tracked vehicles are a part of the maneuver element of an Infantry battalion, this time is greatly reduced because the tracked maneuver element can close rapidly with the enemy to reduce or eliminate the sniper fire.

JJ. USMACV, 27 January 1967, Salient Lessons Learned.

Incident/Observation

River Operations. Recently, the tempo of riverine operations has increased. Some of the salient lessons learned from these operations are summarized below:

1. River Patrolling:

a. Boats should patrol in open column with an interval that will provide maximum radar coverage and at the same time afford mutual support.

b. Boats must conduct a truly random patrol by using some of the following techniques:

(1) Drifting with the tide or current.

(2) Two boats proceeding down stream at low speed with two boats some distance astern drifting with the current.

(3) Patrolling to the left or right of the center of the river.

c. Individuals in boats must be alert to the VC tactic of employing harassing fire from one bank in order to drive a patrol craft toward the opposite bank where an ambush has been set.

d. When approaching a contact, close at an angle that permits the maximum number of weapons to bear on the target. At night, approach contacts darkened at high speeds and illuminate at close range. Make sure the spotlight is aimed before it is turned on.

2. Boarding and Search.

a. Patrol boats should not come directly alongside a contact but rather, when within optimum illumination range, call the boats alongside. This allows maximum attention to be paid to covering the boats and keeping their occupants in view at all times. Patrol boats should remain in mid-stream as much as possible. If it is necessary to close a contact, do it quickly, take the contact in tow and return to mid-stream before searching.

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b. Avoid mooring to the boat being searched. Use boat hooks or engines to stay alongside to enable a fast getaway.

c. Check all lines leading into the water as they may have contraband attached. Although it is too time consuming for all searches, passing a line down both sides and under the keel is a good procedure for checking particularly suspicious craft.

d. A check for a false or double bottom must be made on all craft that are searched.

3. Mines in River Warfare.

a. The VC delay placement of mines until patrol craft and minesweepers have passed a selected target area.

b. The VC mark locations of mines by use of a small floating device such as a coconut or stick and utilize it as a ranging device to indicate when an intended target is within lethal range. Beware of stationary floating objects.

c. For the purpose of diversion, the VC will initiate an ambush against patrol craft and minesweepers at a location other than the area to be mined.

4. River Patrol Boat (PBR) Operations During Delta Flood Conditions.

If the VC remain in their stronghold for at least a short period after the flood waters start rising, PBR's should be moved into the area before the water reaches flood stages to catch the VC as they move out of their strongholds.

KK. 199th Infantry Brigade, 17 February 1967, Operational Report - Lessons Learned, 1 Nov 66-31 Jan 67.

Incident/Observation

Many expedient devices may be constructed to increase the effectiveness of ambushes along rivers and canals. A Claymore mine, placed in a tree and directed downward on a slant, increases the lethality of an ambush directed against personnel in sampans. The Claymore may also be placed on a floatation device, camouflaged as a piece of river residue and held in the mainstream by wires. A thorough knowledge of the effects of tides is also necessary to insure that the ambush position is located where rising water will not force the position to move and disclose its location. Recovery of enemy weapons and equipment is very difficult in deep water, and some thought should be given to the use of nets or magnets to assist in recovery.

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LL. 1st Cavalry Division, Operation IRVING, 13 January 1967.

Incident/Observation

For the destruction of tunnels in high density soils with excessive overburden (greater than 6 feet), it was found necessary to establish the trace of the tunnel complex and destroy it by placing 40-pound composition C-4 charges in 3 to 5 feet deep holes spaced 6 to 8 meters along the tunnel trace. The 40-pound charges were deeply pyramided to establish a shaped-charge effect and detonated simultaneously to achieve total collapse of the tunnels and their entrances.

Lesson Learned

This method of external charges is more advantageous than placing charges inside the tunnel because of the restricted working space. Shaped charges or standard ammonium nitrate cratering charges should be utilized. Military dynamite, if available, would give better destruction per pound of explosive due to the heaving effect brought on by a lower detonating velocity.

MM. 10th Combat Aviation Battalion, 9 November 1966, Operational Report for Quarterly Period Ending 31 October 1966.

Incident/Observation

On several occasions during extractions, stay behind personnel were left in the PZ's as reconnaissance elements. On one occasion a stay behind force was inserted as an extraction was taking place. Two men were placed on each one of 18 helicopters and taken to a PZ where an Infantry company was being extracted. As the aircraft landed, these 36 troops off loaded, and the Infantry company was extracted, thus providing a measure of secrecy to the insertion of this stay behind force.

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Section VI (continued)

P. 1st Infantry Division, 5 January 1967, Monthly Evaluation.

Incident/Observation

Special Operation HORNBLOWER was a feasibility study of the firing of a 105mm howitzer from an LCM6. Two 105mm howitzers were emplaced in LCM6 landing craft for the test. The craft was moved on the Saigon River; it was beached to fire various types of missions. The major problem encountered was the need to relay the howitzers as the tide changed. This problem was overcome by beaching the landing craft at high tide; however, the desired mobility was lost until the next high tide. This technique was found to be workable in general support/re-enforcing or re-enforcing roles but not in a close, direct support role.

Q. 25th Infantry Division, 4 August 1966, Operational Report on Lessons Learned for Quarterly Period Ending 31 July 1966.

Lesson Learned

The use of the tracked vehicle head and chest set with the PRC-25 radio allows continuous communication to be maintained with patrols without disclosing their location by speaker noise.

R. US Army Vietnam, 8 February 1967, Combat Lessons Bulletin Number 5.

Incident/Observation

The use of bulldozers to open jungles as part of combat operations was a unique and challenging task. During the shakedown period, it had been determined that 50 operating dozers could clear about one square KM of light-moderate jungle per day. Since the Iron Triangle contained well over 100 square KM's of moderate-to-heavy jungle, including extensive big rubber trees, a mass clearance type of operation was abandoned as impractical. Therefore, to open up the jungle for this and future operations, it was felt that a combination of cutting swaths across the jungle together with working dozer teams directly in support of the advancing Infantry would provide the best results.

The concept of dozer-Infantry teams born from this operation may well prove a revolutionary development in jungle warfare. The dozer teams consisted of two tank dozers (when available) and six dozers. The tank dozers preceded the dozers and cut through the jungle exposed to sniper fire and booby traps. The following dozers cut swaths through the jungle along the Infantry route of march. Instant (20 minute) landing zones were cut for resupply whenever needed. Maintenance of the dozer teams in the jungles when cut off from all but aerial resupply was a major problem. Maintenance personnel were flown into the AO together with welding equipment,

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dozer parts and air compressors. While the dozer teams with the Infantry were not the most efficient in cutting acres of jungle per day, they did a job which opened areas for future operations. During this operation, the jungle task forces cleared 2,233 acres of jungle.

Lesson Learned

Impenetrable VC strongholds can be opened by the use of dozer-Infantry teams in a manner that will cause them to remain open and no longer be concealed sanctuaries for VC headquarters, base camps and hospitals.

S. 25th Infantry Division, 30 August 1966, Operational Report for Quarterly Period Ending 31 July 1966.

Incident/Observation

Mobility limitations in RVN dictate use of "light" maneuver forces which are deployed into operational areas by helicopters. A substantial number of successful airmobile operations employing four-gun 105mm howitzer batteries were conducted during the period. In addition to providing adequate fire support, a four-gun battery can be lifted in approximately one-half the time required to move a six-gun battery. Howitzer crews can be rotated within a battery as the situation dictates, and the two remaining howitzers can be effectively employed to defend the base camp or provide fire support for squad or platoon size patrol operations near the base camp.

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Section VII (continued)

E. 1st Brigade, 101st Airborne Division, 15 February 1967,  
After Action Report, Operation PICKETT.

Incident/Observation

The Bamboo Threat: The "punji stake" is a well known example of how bamboo can be utilized to maim and kill. Recently the ubiquitous bamboo plant proved that it possesses a danger for the soldier even when it stands unmolested in its natural habitat. A brigade trooper, while stringing commo wire in a tree, accidentally fell into a bamboo thicket impaling himself upon an otherwise innocuous bamboo shoot. The stalk entered his upper right chest and exited his lower left back, fatally injuring the young soldier. This potential danger is especially of concern during helimobile combat assaults wherein the troopers often-times exit the aircraft some distance above the ground over clearings covered with a fairly dense growth of grass and underbrush. Under these circumstances, bamboo thickets should be approached with the same respect one shows punji stakes, because they have more in common than one might think.

F. 196th Light Infantry Brigade (Separate), 7 March 1967,  
Operations Report - Lessons Learned, 1 Nov 66-31 Jan 67.

Incident/Observation

On several occasions, units have sustained multiple casualties from booby traps while searching a VC structure for caches. Proper techniques were used initially, one man inspecting the entrances for booby traps while other personnel provided security from safe distances outside of the structure. After the structure was thought to be safe and a cache was found, the rest of the personnel moved inside to help remove the items. A booby trap hidden in the cache was detonated causing multiple casualties.

Lesson Learned

Units must stress the continuing danger from booby traps while searching VC structures. After the initial search and clearing of entrances, one man should be designated to continue the search and if a cache is found, each item must be inspected for booby traps and then removed from the structure. If a booby trap is detonated, the use of this method will minimize casualties.

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Section X (continued)

E. Headquarters, 1st Infantry Division, 12 August 1966, Operation ABILENE.

1. Incident/Observation

When a unit becomes engaged, commanders and staffs must be continually alert to assist the engaged commander in bringing to bear all available combat power. The engaged ground commander is preoccupied in maneuvering his forces during the heat of battle; it is at this time that higher commanders and staffs must insure that all available artillery, air and other supporting arms are made available and are actually utilized.

2. Incident/Observation

Units requiring external lift of equipment should have at their location and in their possession the necessary slings and nets. Personnel in the lifted unit must be trained in safe rigging and hook-up for external loads, thus avoiding complete dependence on pathfinders to perform these tasks.

F. 2d Brigade, 1st Infantry Division, 12 August 1966, Operation ABILENE.

Incident/Observation

Search and destroy operations should be considered in two phases. The first phase to engage or drive out major VC forces. The second phase is a detailed search to locate and destroy VC facilities not found on the initial sweep. Time phasing should be flexible enough to allow a unit sufficient time to completely destroy all VC facilities.

G. 1st Brigade, 101st Airborne Division, 3 January 1967, Combat Operations After Action Report, Operation GERONIMO I.

Lesson Learned

Battalion-size airmobile assaults can be conducted at night, and this permits the battalion to clandestinely enter the battlefield. Interrogation of prisoners taken relatively close to the LZ indicated that the noise of the helicopter was easily heard by the enemy, but they were not aware that a landing was made in their vicinity.

H. 17th Military History Detachment, 1st Infantry Division, 13 January 1967.

Incident/Observation

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Battalion surgeons, when employed forward, are often unable to treat casualties occurring in the forward area because the majority of casualties are evacuated from the combat site via air ambulance, directly to a medical clearing company, by-passing the battalion aid station.

Lesson Learned

Employment of battalion surgeons should remain flexible. If lines of communication are short, surgeons may deploy forward with their unit. If lines of communications are lengthy, battalion surgeons may augment the medical clearing company. Air ambulances usually operate from the medical clearing company; therefore, battalion surgeons may accompany ambulances to the pick-up site, administering resuscitative treatment on site and during the return flight to the clearing company.

I. US Army Vietnam, 21 January 1967, Combat Lessons Bulletin, Patrolling.

1. Incident/Observation

Saturation Patrolling. (Source: HQ, 1st Infantry Division) Increasingly, battalions of this division will be assigned the mission of saturation patrolling in extensive areas as large as 10 kilometers on a side. Progressively, units will learn to operate independently down to platoon level.

The safety of a rifle platoon operating independently depends on two things:

(1) Repeated movement, including movement after dark so that VC forces cannot conduct a planned attack, but rather must conduct an open tactical maneuver. This is not the VC's most effective method of operating, and during such engagements, they are extremely vulnerable to artillery and mortar fire.

(2) While operating independently, platoon leaders will control and maneuver their elements so that at least a squad base of fire covers all advances across open terrain toward positions which may or may not be occupied by the VC.

Saturation Patrolling as a Technique for Finding and Fixing the Enemy. (Source: HQ, 3d Brigade, 25th Infantry Division) Saturation patrolling is the most expeditious and effective means of finding and fixing the enemy and accomplishing a search and destroy mission in a specified AO. To implement this technique, an Infantry battalion base of operation, with supporting artillery and an appropriate security/reaction force, is centrally located in an AO. Rifle companies may occupy different bases of operation, from which platoon and squad patrols are dispatched.

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The distances to which patrols may operate, still retaining indirect fire support, can be increased by positioning the 4.2 inch mortar platoon in a company base of operation. Platoons and squads may be airlifted into landing zones several thousand meters from the company or battalion base of operations to search assigned areas generally leading back to a base area or a pre-determined ambush site. A variation of this technique is to land separate elements of a company in several landing zones and have them converge on a common, selected location while searching the area of operation enroute. When rifle companies are issued two or three days' rations, disclosure of friendly unit locations is eliminated through the absence of resupply helicopters. There are many variations of this technique, all involving rapid movement and helicopter support. Centrally locating the battalion base of operations enables an Infantry battalion to search and clear an area of approximately 144 square miles without moving its base and displacing the supporting artillery battery.

2. Incident/Observation

The Hunter-Killer Concept. (Source: 1st Cavalry Division) The hunter-killer concept is based on the belief that we should use the bulk of our Infantry whenever possible primarily to execute the basic mission of the Infantry, e.g., "To close with the enemy in order to destroy or capture him." At the same time, we should use our cavalry, some Infantry and measured firepower to uncover the enemy or cause him to disclose his presence. The hunter-killer force consists of two components carefully tailored to the mission, situation, the weather and terrain:

(1) A swift, highly mobile, lightly equipped hunter element, which would seek out the enemy; and

(2) A much larger, heavily supported killer force, which would remain centrally poised and carefully positioned ready to destroy enemy located by the hunters.

The concept is analogous to the mobile defense with a reverse twist; for in both concepts light, resilient forces set the enemy up for decisive action by a responsive striking force. While the hunters hunted, the killers with helicopter lift support would remain centrally located, ready to respond immediately upon detection of a suitable target. The initial lift would be placed on an appropriate time alert. As the hunt progressed, the killers would carefully monitor its progress and tentatively plan commitments that might materialize.

When the killers are committed, the principle of mass (sudden application of overwhelming force), both in combat power and helicopter lift, must be observed. The size of the committed force would depend on the situation, and the principle of economy of force would also be followed. To provide rest for the constantly moving hunters, rifle platoons from the killer force could be rotated with those of the hunter force. In

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this manner, the hunter phase could be maintained for considerable periods, but there would always be fresh units in the killer force ready to close with the enemy.

The hunter-killer concept offers many advantages. Large areas can be searched with minimum cost in manpower and helicopter time; Infantrymen do not wear themselves out searching; the "stay time" of a battalion or brigade in the field with all supporting elements is increased; searches of remote areas are easier to support; and fresh units are always ready to move against any force located.

J. 1st Battalion, 21st Artillery, 1st Air Cavalry Division,  
21 May 1966, Combat After Action Report (Operation DAVY CROCKETT).

Incident/Observation

Under the hunter-killer concept of operation, the hunter forces may operate in areas outside of artillery range. If significant contact is made, artillery will be immediately displaced to preselected positions within range of the contact. One battery is designated as re-action battery, and two howitzer sections are march ordered, ready for immediate displacement. A command and fire direction element plus a minimum manned howitzer section will ride inside the lift helicopters. The howitzer section equipment and 30 rounds of ammunition are loaded between the trails of the howitzers. The advantages of this method of loading are:

- a. Ammunition is immediately available at the howitzer section upon landing.
- b. The howitzer has greater stability in flight; there is less oscillation; and in test lifts aircraft were able to obtain speeds up to 80 knots.
- c. The center of gravity of the howitzer load is moved approximately one foot to the rear, thus allowing the howitzer to ride level in flight. This method reduces the danger of the howitzer striking the lift ship.

Testing this method of loading has proven successful and has received enthusiastic acceptance.

X-9  
(1 May 1967)

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2. There is NO substitute for the personal grit and determination of the man who is immediately face to face with the enemy.

E. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. "Careful placement of M-79 men should be emphasized in order to give them the best possible fields of fire. They must always be on the lookout for enemy in trees. It was found that the M-79s were extremely effective against enemy in trees as well as troops in the open. M-79s must be fired into trees and the high grass even when no enemy are seen.

2. "In a perimeter defense, it is necessary to check the front with small recon parties at first light and periodically throughout the day for 100-200 meters to clear out infiltrators, police the battlefield and to insure that the enemy is not massing for an attack."

F. DF, AVID-CK, MACV, dated 17 February 1966, subject, "Employment of E-158 Chemical Munitions Report from 1st Infantry Division."

Incident/Observation

1. Mission employing E-158 Chemical Munitions was result of request by ARVN to take an area under fire because of suspected VC concentration in a rubber plantation. Aircraft were unable to identify a target, so E-158s caused enemy to move, creating a target for aircraft and artillery. The E-158 chemical munitions were dropped from UH-1D helicopter from an altitude of 1500 feet, flying speed of 80 knots. Temperature gradient - strong lapse. Wind speed at time of drop was approximately 25 knots per hour from west to east. Vegetation in the area was jungle and rubber trees.

2. Results of employing E-158:

a. Immediately after the munitions were on target, movement was observed in the target area.

b. The use of E-158 enabled aircraft to take the enemy under fire.

G. 1st U. S. Infantry Division, dated November 1965.

Incident/Observation(s)

A battalion-sized task force occupied a battalion perimeter just south of a village and was attacked by a series of 5 Viet Cong attacks. The battalion utilized tactical wire to enhance the perimeter.

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Lessons Learned

1. When possible, a unit which goes on an overnight operation should take tactical wire to help secure the temporary defensive perimeter. Tactical wire proved valuable at BAU BANG.
2. Rarely ever occupy the same perimeter on successive nights. Security is enhanced by selecting a new area and occupying it just prior to darkness, allowing sufficient daylight hours for adequate preparation.
3. Registration and planning of mortar and artillery concentrations must be completed early. This action, accomplished on the eve of BAU BANG, proved significant in the reduction of reaction time required to bring fires on the enemy.
4. When the convoy force attacks away from the road, some force must be left to hold the road.

M. 173rd Airborne Brigade, date: 5-9 November 1965.

1. Incident/Observation(s)

It is an advantage to set up a battalion base and operate from that base rather than constantly move the battalion as a whole.

Lesson Learned

This battalion base procedure expedites logistical support and command and control. Heavier weapons, such as 4.2 inch mortars, can also be delivered into the base if needed. This technique has been found to be an excellent way to search an area.

2. Incident/Observation(s)

In dense jungle terrain most enemy contacts are made at distances of 15 to 30 meters. Once contact is made with an enemy with automatic weapons, the contact force is relatively glued to its position, and it becomes difficult to pull them back to allow heavy fire support to be used close-in.

Lesson Learned

In the future, when conducting approach marches, approximately five fire teams of five men each precede the main body by 100 to 200 meters. In this manner the minimum of forces will be committed when contact is made, enabling the maximum freedom for maneuver of the main body.



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I. Operational Critique, 173d Airborne Brigade, 1 - 3  
January 1966.

Incident/Observation(s)

On several occasions the 1/PAR returned to an area which they previously searched and discovered that the enemy had returned. This procedure of returning to an area resulted in several enemy KIA.

J. Operational Critique, 173d Airborne Brigade, 6 - 14  
January 1966.

Lesson Learned

The use of the 20# smoke pot was found to function extremely well to asphyxiate anyone in an enclosure.

K. Letter, JRATA, subject, "Tunnel Contamination, Chemical Agent," dated 3 February 1966.

Incident/Observation

The purpose of the above letter is to report a field expedient method of disseminating agent CS for tunnel denial contamination.

The CG, 173d Airborne Brigade, and the CG, Australian Army Forces, Vietnam, have developed two methods of tunnel denial contamination which, although differing slightly in methods, appear to be an effective approach to the problem.

Lessons Learned

1. "The 173d Airborne Brigade has prepared contaminating charges by wrapping 3 pound plastic sacks of micro-pulverized bulk CS with detonating cord. Single or in parallel, these containers are detonated within the tunnel and spread the agent throughout the immediate area. Field reports indicate that the tunnel walls are contaminated to a depth of six to eight inches and that an effective denial concentration of long duration is expected."

2. "The Australian Army forces prepare their contaminating charges in a different manner. They prepare cans of micro-pulverized bulk CS agent, each with a small detonating charge (1/4 pound TNT and electric blasting caps). After opening a tunnel entrance, these containers are placed in the tunnels approximately twenty to thirty meters from the entrance. A forty pound demolition charge is then placed at the entrance and is wired in parallel with the contaminating charge. On detonation, the cans of agent are ruptured by small attached detonating charge, and the blast wave from the heavy charge is believed to carry the cloud of agent a considerable distance down the tunnel."

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3. 'CS has been incorporated into Division Base Defense Plan as an initial response to an attempted penetration.

4. CS authority has been requested for all Division operations (1st Cav Div). CS from homemade dispenser has been used 5 times. Lessons learned from these operations are:"

a. 'Must use CS close enough to assaulting troops that they can exploit the CS in about 20 minutes."

b. "CS placed in very densely foliaged areas is an effective blocking agent for short periods."

c. 'Must have close coordination at point of release to make last minute adjustments in location of strike due to winds."

d. 'Attacking troops must take care of masks (particularly keep them out of water)."

e. 'Type targets attacked - enemy in trenches and spider holes, suspected automatic or crew served weapons locations."

f. Aerial Rocket Artillery or Air Force TAC Air on standby is an excellent method of exploitation."

K. Letter, AVC-SO, United States Army Vietnam, subject, 'Employment of F-158 CS Clusters,' dated 22 January 1966.

Incident/Observation

"The 173d Airborne Brigade (Sep) employed riot control munitions as a part of Operation LAFAULET. The drop aircraft (U-1L) was accompanied by a light fire team and artillery air observer. Concept of employment on suspected position was to seed an area with CS, flush the enemy and engage any enemy with artillery fire and armed choppers."

Lessons Learned

1. "When dropping the E-158 CS clusters from a helicopter, the best altitude of drop appeared to be 1500 feet for accuracy ground cover and reasonable safety from enemy ground fire. When a pilot was experienced in dropping other munitions, accuracy was excellent. On the one occasion in which the pilot was not experienced, one cluster was dropped very near a friendly unit. Experience indicates a need for pilot training with munitions."

2. "The E-158 cluster should be employed in sufficient quantities to thoroughly cover the target area quickly."

3. 'Friendly troops must be near enough to the target area to exploit the use of CS munitions."

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4. "Greater use should be made of TAC aircraft since greater numbers of munitions per sortie could be employed. More rapid delivery would reduce vulnerability to ground fire."

L. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "In order to 'fight' and defeat any enemy you must first 'find' and 'fix' him. To do this with the VC is one of the most difficult problems facing the U. S. Army in Vietnam."

Lessons Learned

a. Make and demand complete reports -- Who, What, When, Where, How, Why and action taken.

b. Train, organize and employ small, long range and stay-behind patrols.

c. Use Vietnamese interpreters and check the interpreter by using an American who understands the Vietnamese language.

d. Sanitize uniforms and wallets prior to operations.

e. Use cameras in the field for gathering intelligence information.

f. Do not conduct excessive reconnaissance of planned operational areas. You may alert the enemy.

2. Experience in Vietnam is replete with repeated incidents wherein the capability to produce immediate photographic evidence would have provided vital intelligence data with respect to Viet Cong encampments, supplies, equipment, booby traps, etc., as well as invaluable visual aids for the correction of maps and historical records."

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Section V (continued)

III. MACV 7th Infantry Division (AFV) Advisory Detachment,  
dated 16 February 1966.

Incident/Observation(s)

On 7 February 1966, a Vietnamese Infantry battalion, while conducting a motor march to a training center in Cai Be District, Dinh Tuong Province, was ambushed and decimated.

The Senior US Advisor to the Vietnamese 7th Division attributed the Viet Cong's success primarily to the poor prior planning and coordination accomplished in preparation for this move. In view of this he proposed to his Vietnamese counterpart the following checklist for future convoy planning:

1. Intelligence.
  - a. What will weather conditions be?
  - b. Have areas of special danger been determined?
  - c. Have latest intelligence reports been screened to determine any VC movement or intentions to set an ambush in the vicinity of route of march?
2. Designation of Convoy Escort.
  - a. Who will be the Convoy Commander?
  - b. What troops will act as convoy escort?
  - c. Will APC's be used as escort? If so:
    - (1) What size unit?
    - (2) Will unit's present mission interfere with their movement?
    - (3) What is movement time from unit's location to convoy pickup point?
  - d. Will armor cars be used as escort? If so:
    - (1) How many cars will be needed?
    - (2) What is movement time from cars' location to convoy pickup?
  - e. Has aircraft cover been requested?

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or VNAF)

(1) What aircraft will cover convoy? (US

(2) What FAC aircraft will cover convoy?

briefed?

(3) Has VW observer been designated and

location been designated?

(4) Has time for aircraft to be on station/

f. Has artillery support been provided for?

been placed on alert?

(1) Have platoons along designated route

segments of the highway they are responsible to cover?

(3) Have platoons been instructed on what the direction of movement of the convoy is?

(4) Do platoons have radio communication capability with flying observer and with the convoy commander?

3. Road Security and Reaction Forces.

a. Has road clearance/security been provided for?

of march been notified?

(1) Has each sector and subsector along route

up TCP? (Where and when they will be in operation)

(2) Has National Police been notified to set

clearing operations have been completed prior to releasing convoy?

(3) Has provision been made to insure road

notified of the time that convoy will be in their area?

(4) Have all units along route of march been

police available to assist convoy across Vinh Long Ferry?

(5) Has provision been made to have military

reaction force?

b. Have specific units been designated as a

been designated for the reaction forces?

(1) Have specific areas of responsibility

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(2) Do reaction forces have radio communication with the convoy commander while it is in their areas?

(3) Has each unit been notified as to what time they are to be on full alert?

(4) Does unit have necessary transportation available?

(5) Have the reaction units been informed of the latest intelligence in their areas of responsibility?

4. Coordination.

a. Has necessary coordination with the convoy been accomplished?

(1) Has point of pickup been designated? (IP)

(2) Has convoy commander been briefed?

(3) Has a secure area been designated in which to organize the convoy into serials and integrate the escort vehicles?

b. Has necessary coordination been accomplished with other Corps/Divisions/Sectors?

(1) What is originating point of convoy?

(2) What is termination point of convoy?

(3) What type cargo is the convoy carrying?

(4) What are the number and type of vehicles in the convoy?

(5) What type radio equipment is available in the convoy vehicles?

(6) What type and how many weapons are there organic to the convoy?

5. Support. Have provisions for vehicle recovery been made?

a. Does convoy have organic capability to accomplish vehicle recovery?

b. Has provision been made to have standby equipment available?

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c. Does convoy have the organic capability to make emergency repairs?

d. Has provision been made to have mechanics and spare parts available on a standby basis?

N. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

1. During operations in the Plei Me area last month, difficulty was encountered in the determining of friendly troop actions. Further, friendly personnel were not at all times aware of their own location. Recommended solutions to this problem are the use of artillery concentrations at grid intersections and the use of smoke. However, if operations continue during the hours of darkness, these methods are less effective.

Lesson Learned

Two 30-inch searchlights can aid friendly personnel in determining their location at night by providing two points of resection. With two searchlights at known locations, the infantrymen can measure his azimuth to these points with his compass and plot the section on his map to determine his location. The searchlights would be elevated to 1600 mils to provide a beam high enough to be observed in low jungle terrain.

2. Rivers and streams with varying degrees of fordability have frequently become obstacles to units on patrols and large scale operations.

Lesson Learned

Units should carry at least 200 feet of rope per rifle company and enough ponchos to construct rafts for the transportation of radios, weapons, and non-swimmers across unfordable streams. Nylon rappelling rope was found to be particularly suitable.

3. During recent combat operations, target location was given to the aerial rocket artillery with reference to direction of flight. This method was found to be unsatisfactory in that the pilot was reacting to external commands and had no way to orient himself in relation to the target. A more effective procedure developed to locate the target was to select a distinct terrain feature and give the pilot an azimuth and distance from the feature. In the absence of a distinct terrain feature, a smoke grenade can be used.

4. In rugged or heavily wooded terrain ground observers frequently encounter difficulty in locating and adjusting the initial

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rounds. The aerial observer cannot always see the target. If both observers are monitoring the same radio frequency, desired results are most efficiently obtained by combining the capabilities of both observers. The aerial observer "walks in" the initial fires until the ground observer can assume control for the close-in adjustment.

5. Recent operations conducted in the Pleiku area revealed the potential of artillery in dispersing or preventing possible ambushes and assisting personnel to maintain direction while moving through dense terrain. The use of artillery fires to probe suspect enemy positions allows our forces to gain definite intelligence with minimum exposure of friendly personnel. WP or HE air bursts were particularly useful to the companies in maintaining a fix on its location and direction.

O. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. Due to the very nature of counterinsurgency operations, daily rear area patrols are mandatory, regardless of the proximity of the patrolling to the front lines. Daily patrols determine fluctuations in the sentiment of the local populace and develop intelligence useful to the patrolling unit, such as signs, markings, directional arrows, etc. Security of supporting units has been greatly enhanced by vigorous rear area patrolling.

2. A rapid "sweep" conducted by a large unit in VC territory seldom achieves a satisfying result, even when blocking forces are employed. The VC either get prior information of the sweep and evacuate, or they blend indistinguishably with the people, or they manage to exfiltrate. Greater success will be realized if the Marine units "stay awhile" after the initial "sweep" to conduct exhaustive search and patrolling of the entire area. During this period, caches can be found, intelligence information and material can be discovered, VC freedom of action and channels of communications will be disrupted, the confidence of the people can be gained and exploited, and VC could be caught filtering back in.

3. It has been the experience that large-scale operations have generally resulted in far less enemy contact than normal squad patrols and ambushes. Unless the VC feel that they have a superior force, it has been demonstrated repeatedly that they will avoid contact. Most successful contact with the VC has been as a result of squad patrols establishing the initial contact with the deployment of a rapid reaction force when necessary. (This method, using an armored reaction force has been very successful in a battalion TAOR.)

4. When reconnaissance units established OP's deep inside VC territory, they would almost always have numerous VC sightings. Seldom, however, could offensive capability be brought to bear against the target because of the time lag involved. Occasionally, effective



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results were obtained from calling artillery fires on the larger targets. An OP concept was adapted by infantry units to include an emphasis on offensive capability. OP's deep in VC territory have been established, usually in conjunction with nearby friendly operations. These OP's are inserted by helicopter and include a dismounted 106mm RR, a mortar squad, sniper teams, artillery and mortar FO's, and sufficient infantry (usually a platoon (-) (rein) for security. The mission of the OP unit is to be inserted by helicopter on a dominant hill, establish and secure an OP and observe for VC targets of opportunity. Any target in range is engaged by an appropriate weapon. Large targets may be engaged by artillery. Small fast moving, elusive targets may be immediately engaged by the recoilless rifle or mortar. Individual VC within 600 meters may be shot by the sniper team. This technique is best employed in an area where the VC have had long-standing freedom of action and are not accustomed to having to conceal themselves at all times. It is also best employed in conjunction with a nearby large scale offensive ground operation which tends to "stir up" the VC in the area.

5. The most common type of contact with the VC is a sniping incident. The sniping ranges from a single sniper, who shoots a quick round or two then disappears, up to a squad of snipers firing heavily for several minutes and taking on more of the character of an ambush. Almost always, these incidents take place at long range, 300 yards or more, and the VC fire is rarely effective. Also almost always, the snipers are so well concealed the Marines cannot see a target to engage. A common tendency is for men who cannot see a target to withhold their fire. Another common tendency is to reply on rifle fire alone, which has very limited effectiveness against the well-covered and well-camouflaged VC. Most effective of all is an immediate and heavy volume of LF type fires placed on likely sniper positions in the general area from which the sniper fire is coming. Rockets, M-72 LAW's, M-72 Grenades and rifle grenades will almost invariably establish immediate fire superiority for the Marines and cause the VC to break off and run. It is during the VC withdrawal that the best opportunity to inflict casualties arises, again with emphasis on saturating the VC position with LF fires.

Lesson Learned

have combat patrols carry 3.5" and M-72 rocket launchers, M-79 grenade launchers and rifle grenades. Train troops to respond immediately with these fires against snipers, whether or not a specific target is identified.

P. United States Army Vietnam, dated 24 November 1965.

Incident/Observation(s)

1. In ambushes of patrols on their routes of movement, the VC use mines to attack possible motorized reinforcements.

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2. In the ambush of motorized equipment, the VC emplace mines in the roadway, wait for the vehicles, touch off the mines and withdraw. To counteract mine detection teams, methods of attack were improved by using various forms of camouflage, diversionary actions, counter-action to mine detection and by activating lightly equipped cells (3 men), or squads, for attack with grenades and mines. When objectives appropriate to VC capabilities and equipment are located for destruction, mines and bombs are used to destroy convoys. To attack a small number of vehicles (3 to 5), ambushes are conducted in conjunction with bombs, mines and explosives for destruction of vehicles and seizure of weapons.

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Section V (continued)

Q. After Action Report, 2d Battalion, 27th Infantry, 25th Division, dated 8 February 1966.

Incident/Observation(s)

1. When a tunnel is being blown, caution should be taken to avoid casualties caused by secondary explosion of caches in the tunnel.

2. Care must be taken that the detonation of one tunnel does not trap a friendly tunnel searcher working in a connecting tunnel. The best way to avoid this is to divide the area into tunnel search zones. Those tunnels running close to the zone boundary require coordination between search and destroy elements before one is blown. Complete search of all tunnels will minimize the possibilities of trapping a friendly.

R. Operation PALLY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

When reporting incoming fire over the radio, commanders should disguise the accuracy of this fire (i.e., if it is short, then report it as long; if it is long, then report as short, etc.). The VC appear to be monitoring unit frequencies and adjusting their fire based on friendly commanders' reports.

S. MACV Lessons Learned No 56, dated 18 April 1966.

Incident/Observation(s)

The use of tunnels by the VC as hiding places, caches for food and weapons, headquarters complexes and protection against air strikes and artillery fire has been characteristic of the guerrilla nature of the war in Vietnam. The detection, exploitation, neutralization and/or destruction of these tunnel systems continue to be a major problem.

Lessons Learned

1. Tunnel techniques.

a. A trained tunnel exploitation and denial team is essential to the expeditious and thorough exploitation and denial of Viet Cong tunnels. Untrained personnel may miss hidden tunnel entrances and caches, take unnecessary casualties from concealed mines and booby traps and may not adequately deny the tunnel to future Viet Cong use.

b. Tunnel teams should be trained, equipped and maintained in a ready status to provide immediate expert assistance when tunnels are discovered.

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c. Careful mapping of a tunnel complex may reveal other hidden entrances as well as the location of adjacent tunnel complexes and underground defensive systems.

d. Small caliber pistols or pistols with silencers are the weapons of choice in tunnels, since large caliber weapons without silencers may collapse sections of the tunnel when fired and/or damage eardrums.

e. Personnel exploring large tunnel complexes should carry a colored smoke grenade to mark the location of additional entrances as they are found. In the dense jungle it is often difficult to locate the position of these entrances without smoke.

f. Two man teams should enter tunnels for mutual support. The second man can assist the first in emergencies.

g. Tunnel team members should be volunteers. Claustrophobia and panic could well cause the failure of the team's mission or the death of its members.

h. Constant communication between the tunnel and the surface is essential to facilitate tunnel mapping and exploitation.

2. Tunnels are frequently outstanding sources of intelligence and should therefore be exploited to the maximum extent practicable.

3. Since tunnel complexes are carefully concealed and camouflaged, search and destroy operations must provide adequate time for a thorough search of the area to locate all tunnels. Complete exploitation and destruction of tunnel complexes is very time consuming, and operational plans must be made accordingly to ensure success.

4. The presence of a tunnel complex within or near an area of operations poses a continuing threat to all personnel in the area. No area containing tunnel complexes should ever be considered completely cleared.

5. Current chemical denial methods are only temporarily effective against tunnel complexes. Test results to date indicate that CS-1 effects should last about seven days. Extensive research and development efforts have been requested in the entire field of tunnel location and denial to provide increased effectiveness in operations against tunnel complexes.

6. A representative equipment list for a tunnel team is shown below:

- a. Protective masks - one per individual.
- b. TA-1 telephone - two each.

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- c. One half mile field wire on doughnut roll.
- d. Compass - two each.
- e. Sealed beam 12 volt flashlights - two each.
- f. Small caliber pistols - two each.
- g. Probing rods - twelve inches and thirty-six inches.
- h. Bayonets - two each.
- i. Mity Mite Portable Blower - one each.
- j. M7A2 CS grenades - twelve each.
- k. Powdered CS-1 - as required.
- l. Colored smoke grenades - four each.
- m. Insect repellent and spray - four cans.
- n. Intrenching tools - two each.
- o. Cargo packs on pack board - three each.

T. Headquarters, 2d Brigade, 1st Infantry Division, Operation HASTIFF, dated 31 March 1966.

Incident/Observation(s)

1. The uncovering of large VC rice caches has continually presented a major problem to the unit making the discovery. In many cases it is not possible to extract the rice, and thus it must be destroyed. In addition to the method of exposing the rice to water, another effective technique of rice destruction has been utilized.

Lesson Learned

An effective means of destroying rice by burning has been found. Gasoline, diesel oil and unused artillery powder increments are mixed in with the rice to insure a hot fire.

2. The following are two techniques that have been effectively used on operations directed against VC base camps or fortified areas:

a. "As the VC invariably evacuate their base camps when they are under attack, a wide enveloping maneuver is the best approach to this type of attack. Ambushes should be established to the flanks and rear of the VC position. Frequently, there are not enough VC defenders to man all defensive positions in the camp. For this reason, contact should be spread to several points."

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b. The VC cut fire lanes close to the ground. Frequently these cannot be seen by a standing man. Men must be instructed to squat down and look for them, particularly when approaching a VC fortified position.

U. 26 Brigade, 1st Infantry Division, Operation HALLT, dated 7 March 1966.

Incident/Observation(s)

During Operation HALLT, the following two techniques proved quite successful:

a. One was used when a battalion was moving through jungle in a tactical march column. Normal security was employed to the front, flanks and rear; however, it was known that the VC were following the unit at a distance to maintain contact and keep informed of its location and activities. The technique used was to halt the battalion for a break, an ambush of approximately platoon size then being established in the center of the battalion position where its establishment could not be observed by the VC trail party. The battalion then resumed its march, marching right through the ambush position. The ambush remained in place waiting for the VC trail party to come up. This technique was used on two occasions and produced kills both times. The ambush remained in position until the battalion had moved off approximately 1,500 to 2,000 meters, and then it picked up and trailed the battalion, hoping to get additional kills from VC who believed the US forces to have passed.

b. The second technique involved placing the reconnaissance platoons of all the infantry battalions under brigade control for the operation. This provided the brigade with three highly mobile and flexible units with a great deal of firepower available to deal with the variety of situations which arises during an operation. These platoons were used to:

- (1) Investigate intelligence reports of VC activity in the area.
- (2) Screen flanks and rear of brigade elements.
- (3) Provide route and area reconnaissance.
- (4) Screen areas to be occupied by the brigade.
- (5) Provide armed escorts for supply convoys, Psy War/Civil Affairs Teams and Medevac patrols.
- (6) Provide security for brigade installations at night.
- (7) Conduct village searches and establish highway check points.
- (8) Show of force missions.

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Section V (continued)

V. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Montagnard scouts or other indigenous personnel, that is Regional forces, Popular forces and District Personnel, should accompany each company-size unit during combat operations to facilitate movement in unfamiliar areas as well as for timely recognition, interrogation and processing of suspects.

2. Incident/Observation(s)

This unit had previously learned that the optimum size a Recondo patrol was a TOE squad (+) (approximately ten men). Over a period of time and in spite of strenuous efforts to move personnel forward, the strength of rifle squads decreased, in some cases to as low as five or six men. On a couple of occasions squad-sized (5 men) Recondo patrols were practically put out of action when they suffered a serious casualty since the remainder of the men had to assist in extracting the casualty.

Lesson Learned

The Recondo patrol of 10 men or more produces better results; the individuals have greater confidence in their own ability to engage and destroy the enemy. The patrol has greater staying power, the ability to extract and/or care for its wounded and greater tactical flexibility.

3. Incident/Observation(s)

When operating in dense mountainous terrain where LZs are few and far between, introduction of reserve force in time to influence an action is next to impossible. Additionally, the dense terrain usually limits an engagement to a few people at a time, normally the point or lead element.

Lesson Learned

When operating in such terrain, the axis of advance must be carefully analyzed and the forces to be committed must be properly weighted for a particular axis. By utilizing all available forces and not withholding a reserve, per se, an area of operation was saturated. During this operation, the battalion committed forces on six axes simultaneously. A Co, two axes, B Co one axis, C Co two axes and a Provisional Company one axis. Axes were selected so that forces could be mutually supporting. When terrain precludes introduction of a reserve force in time to influence the action, an equivalent result can be obtained by saturating the area of operations with forces on multiple axes.

4. Incident/Observation(s)

Employment of the LRRP during Operation HARRISON demonstrated complacency of the enemy in areas he considers safe. Undetected infiltration of the LRRP teams allowed for the exploitation of this complacency.

Fire discipline is especially important for LRRP teams because the VC employ decoys to draw fire when a small party is suspected in the area. Therefore, patrol leaders must be able to determine when their fire is being solicited and when it is actually needed for protection.

5. Incident/Observation(s)

The optimum drop altitude for the M7A3 grenade is 100-300 feet. This has resulted in a new technique of delivery in which Arty prepares the target and screens it with a WP preparation to afford concealment for the delivery ship. The best method of exploiting this type of RCA attack against VC units and personnel is to exploit the effects of RCA with Arty as soon as the delivery ship has cleared the target area.

W. 1st Infantry Division, Lessons Learned, dated 15 March 1966.

Incident/Observation(s)

Crossing water obstacles. Due to map inaccuracies, heavy run off in the wet season and limitations on aerial reconnaissance imposed by heavy jungle canopy, units often find themselves confronted unexpectedly with serious water obstacles where none were anticipated.

Units should plan for this contingency and should carry at least one 120 foot climbing rope and five snap links per platoon. One air mattress per squad is desirable to ferry radios, machine guns and 81mm mortar ammunition.

X. 173d Airborne Brigade (Operation PHOENIX), dated 6 May 1966.

1. Incident/Observation(s)

Movement of company-size units in secondary jungle is limited to 300 meters per hour or less, thereby increasing the time required to reinforce friendly elements or maneuver to cut off withdrawing enemy. Consideration must be given these factors when assigning search and destroy missions so that response of subordinate units in the contingency of a meeting engagement will be timely.

2. Incident/Observation(s)

Due to limited visibility in secondary jungle and the fact that the VC emplaces machine guns in well dug in and concealed positions, and due to his habitual employment of the Hugging Tactic, it is



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advisable to initially fire artillery at a greater range and systematically walk it toward the friendly positions.

3. Incident/Observation(s)

When the enemy breaks contact, maintain continuous artillery fire on his suspected routes of withdrawal and assembly areas. In many cases this will be the only effective possible means of pursuit.

4. Incident/Observation(s)

W/C Air use of CM is effective against enemy troops in the open. However, it has little effect against a dug-in enemy, and employment is not accurate enough to guarantee safety to friendly troops when used in close support.

Y. 173d Airborne Brigade (Operation SILVER CITY), dated 15 April 1966.

1. Incident/Observation(s)

Each unit must patrol aggressively around its night position. On 16 March the 2/51st Infantry was surprised by a VC Regiment. Only the superior firepower and aggressive fighting spirit of the troops prevented the unit from being hurt severely.

2. Incident/Observation(s)

When two units are moving to link up with each other, one unit should move to a certain pre-designated point, stop and await the arrival of the other unit. Thus only one unit is moving, and there is less problem of linking without firing at friendly forces.

3. Incident/Observation(s)

When a Battalion is moving from one point to another in the jungle, it is hard to move on more than one axis (mutually supporting axes). In this situation, the two columns usually bump into each other continuously.

7. 25th Infantry Division (United States), dated 1 January 1966-30 April 1966.

The following are some Lessons Learned during this period by two of the maneuver battalions:

1. Evacuation of wounded during the attack must be delayed.

There is little more that can be done for these casualties at the platoon or company command post that cannot be done in their firing positions. Every available man must be kept on the perimeter shooting. This includes individuals who are lightly wounded. In addition, evacuating the wounded tends to confuse men along the line who feel they missed getting the word about a withdrawal.

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2. A right defense supplemental package brought in when the unit stops to defend and takes out in the early morning is a must. However, the decision must be made early enough so that this package can be brought in before darkness. This battalion has established an SOP package consisting of the following items.

- 20,000 rounds 5.56mm for M16 rifles
- 6,000 rounds 7.62mm for M14 rifles
- 12,000 rounds 7.62mm for M60 machineguns (2,000 rounds per machinegun)
- 1 .50 caliber machinegun and 5,000 rounds of ammunition
- 500 hand grenades
- 400 40mm rounds for 70mm grenade launchers
- 50 rounds of 81mm mortar
- 25 Claymore mines
- 30 LARs
- 30 trip flares
- 2 flarethrowers
- AP mines
- Extra radios

3. Defensive fires must be well planned for all indirect fire weapons. One technique is to plan priority fires for the artillery to the front of one platoon, 4.2-inch mortar to another and 81mm mortar for the remaining platoon. This should insure accurate and responsive fire in all sectors. The flexibility of massing or shifting any combination of these fires to support any one platoon is still a reality.

4. The battalion SOP for shifting an ambush position after any contact with the Viet Cong was proven valid. The ambush patrol in the north was shifted west and later caught the Viet Cong by surprise. The Viet Cong appeared to avoid the patrol's original location where contact had been made earlier.

5. The occupation of existing fortifications and trench networks dug by the Viet Cong invites trouble. They are familiar with them and know the weak spots well. When limited time requires that Viet Cong fortifications be used as hasty shelters, hasty firing pits should be cut into the trench to lessen the vulnerability from fire down the trench lines. Claymore mines should be set up in the trenches to cover areas which cannot be physically occupied. Units cannot "hunker down" and stop digging after dark, but must take the calculated risk of the noise involved and continue their defensive preparations, covered by outposts.

6. The employment of a rifle company without reinforcements in an isolated defensive perimeter invites Viet Cong attacks. Its validity is suspect. Actually this may have potential as a good way to "bait" a sizable Viet Cong force, but reaction forces must be predesignated by higher headquarters and have coordinated plans to respond immediately. The reaction force must be capable of being effectively deployed and fighting

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in the hours of darkness, during the first hour after engagement. It cannot wait until first light because the Viet Cong base their attack on the assumption that such a force will wait.

7. Personnel carriers attached to an isolated company defensive perimeter greatly enhance the unit's ability to react. The OLM machineguns augment the company's firepower. Further, a vehicle is available to move casualties, equipment or ammunition, as may be required.

8. Machinegun positions must be especially well prepared and protected. They become the prime targets of Viet Cong small arms and grenades.

9. Landmarks such as buildings should be avoided as command post locations. They are usually well known by the enemy and easy to identify as targets for accurate fire.

10. Platoon sergeants and squad leaders must be familiar with the frequencies for the company and battalion command nets and the artillery fire direction net. In a matter of minutes, one of these leaders may be the platoon leader.

There exists a definite need for the radio communications from platoon to squad in the defense. Even the unreliable AM/PIC-6 is better than no communications. Extra AM/PIC-10 radios could be brought in for use by the squads during the night.

All patrol leaders should be given the battalion command net frequency in case the company command net ceases to function. Battalion can advise the patrol of the situation and provide indirect fire support, as may be required.

11. A company can employ all the Claymore mines it can get in the defense. They can be employed in depth with the majority being placed right next to the defensive foxholes. As mentioned above, they also would be useful to place in Viet Cong trenches leading into the position which cannot be covered adequately or occupied.

12. Squad leaders must be brutal in their insistence that positions are well prepared and improvements are continually made. When the situation demands, such improvements may be continued after dark covered by patrols and outposts. A calculated risk must be taken between the noise and lack of security involved and the need of an adequate defensive position.

13. It is unlikely that patrols will be able to withdraw back to friendly lines when the Viet Cong are conducting a major attack. Adequate ammunition must be on hand to sustain the patrols in such situations. These patrols become a ready reserve for the company commander and can be used as maneuver elements to ambush withdrawing Viet Cong units if alerted by the company command post. They also can be maneuvered into positions which would place the Viet Cong in a devastating cross fire.

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14. Early probing action may be a prelude to a major attack and cannot be taken lightly, particularly if Viet Cong are encountered at about the same time in several areas in the vicinity of the defensive perimeter.

15. 0400 hours appears to be a good "stand-to" time for defending units.

16. Time permitting, companies should prepare hasty supplementary positions. In any event, the company defense order should include the location of secondary positions that platoons will withdraw to in the event withdrawal becomes necessary.

17. The bayonet for the M16 rifle should be issued as soon as possible. The more attack by Viet Cong and, due to a shortage of ammunition, the bayonet would have become Company A's primary weapon.

18. Plans to attack the withdrawing enemy must be aggressively executed. Aggressive follow up by major units of a brigade task force to find and fix the enemy is a necessity. After a major action, the Viet Cong force can be assumed to be low on ammunition and faced with immense problems of reorganization, evacuating dead and wounded, and hiding from a fresh pursuing force. All other plans should be altered to take advantage of this unique opportunity. This appears to be an excellent time to employ armor and mechanized infantry in conjunction with widely scattered battle flights of reinforced platoon size with ready airborne reaction forces on standby. This reaction force must be capable of attacking and fighting in the darkness that the Viet Cong invariably uses to cover his withdrawal. Tanks and personnel carriers with starlight driving devices, or even with lights on, should be considered.

19. In conjunction with the above, adequate time must be allowed for a detailed battlefield search in the general vicinity of the action. Valuable documents, weapons and equipment can be obtained. This is not the time for haste.

20. Small pressure mines placed on the ground approximately 25 meters from friendly position will assist in the night defense. They can be recovered in the morning without danger if no attack occurs.

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Section VI. Knowledge of Current Use of Weapons and Equipment.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-23 (RL), dated 16 October 1965.

1. Incident/Observation

"The weapons platoon is often employed as a fourth maneuver platoon because of terrain limitations on their organic heavy weapons."

Lesson Learned

"The weapons platoon should be augmented with at least 1 M-60 machine gun and 13 M-14s to add firepower to the platoon."

2. Incident/Observation

a. "Both 81mm mortars and 60mm mortars should be available. The unit would be able to select the appropriate indirect fire weapon depending on terrain and mission."

b. "Fewer selector switches should be put on M-14s. Many times single, well-aimed shots are more effective than a burst from an M-14 on automatic. Individuals waste ammunition firing M-14s on automatic, and the fire is often not effective because the weapon has a tendency to climb when fired on automatic."

Lesson Learned

"The M-14 E2 is an effective automatic weapon."

D. Antiaircraft Capability, Viet Cong Forces, Republic of Vietnam. Serial: CIGPO, dated 24 December 1965.

1. Confirmed AA Weapons:

- a. Soviet sg43/SGM 7.62 RMG.
- b. CHICOM DShK M1939/46 (mod 54) 12.7mm RMG.
- c. US 50 Caliber M2 MG.
- d. German MG 34 7.92mm MG.
- e. CHICOM Copy Maxim 38 7.52 MG.

2. AA Weapons NOT Confirmed But in Possible Use:

a. 60mm Mortar tube modified and mounted for AA Fire. Projectile has local manufacture fuse with possible time delay varying from 650 to 1300 feet.

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- b. US 20mm cannon removed from downed aircraft.
- c. Viet Cong fixed directional mine. Effective range 150-250 meters.

C. CDR Technical Report No. 1 by US Army Headquarters, Vietnam, dated 24 December 1965.

1. Incident/Observations

Suggested methods of dealing with Viet Cong tunnels:

- a. "To clear enemy troops out of the tunnels, the gas from the M7A3 gas grenades should be blown into one of the tunnel entrances using the 'Mity Mite' blower. One or two grenades should be adequate for most systems. The Mity Mite can then be used to blow some of the CS gas out of the tunnel so that it can be searched. DO NOT use KC Smoke unless oxygen masks are available."
- b. Searchers should work in teams of two or more men. Searchers should be equipped with the TA-1 or other sound-powered telephone. This speeds up the work and adds to the safety of the team.
- c. If a trap door or airlock is discovered in the tunnel, it can be removed and the Mity Mite be used to blow the CS gas which still lingers farther into the tunnel complex.
- d. When a main tunnel of a complex is discovered, a demolition charge set off in it may unseat any additional trap doors or air locks. This will enable further flushing and searching.
- e. After tunnels have been searched, they should be destroyed with demolitions and/or contaminated with CS-I powder. One good way of doing this is to place a six-pound bag of CS-I powder on a strand of detonating cord between cratering charges inside the tunnel.
- f. When time is limited, CS grenades - M7A3 - blown into the tunnel by Mity Mite will contaminate the tunnel for about one week.

2. Incident/Observations

The CS gas grenade M7A3 has been used in Viet Nam in the following ways:

- a. Thrown by hand into tunnel mouths.
- b. With the Mity Mite Blower.
- c. Dropped from homemade launchers mounted in helicopters. It is reported that up to 400 grenades have been dropped at one time, thus establishing a very high concentration of CS gas in a local area.

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D. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

"It took time to reload M-16 magazines, one round at a time. In the heavy action we encountered, this took excessive time at critical periods. It was particularly critical during the enemy night attack. Also it was difficult to keep track of empty magazines in a heavy fire fight."

Lesson Learned

A need exists for an expendable, plastic type magazine which is resupplied to the rifleman fully loaded in a bandoleer similar to the old M-1 clip of eight rounds.

E. 1st U. S. Division, dated November 1965.

Incident/Observation(s)

Extra M-14s are needed on convoys for men normally armed with 45 caliber pistols.

F. Letter, AVID-CD, 1st Infantry Division, dated 8 February 1966, subject, "Employment of Experimental Riot Control Agent Munitions in Combat Operations (U)."

Incident/Observation

Riot Control Agent Munitions (E-158 Clusters and E-8CS Rocket Launcher) were employed in support of combat operations. All the targets on which the CS was used were 'on-call' type targets which were presented during search and destroy operations.

Lessons Learned

1. Because of the inherent search characteristics of riot control agents, particularly when employed under natural or inversion temperature gradient, the E-158 Cluster can be profitably used for reconnaissance. The technique recommended is to deliver E-158 Clusters on suspected enemy concentrations; if movement is observed, air strikes and/or artillery can be placed on the target to destroy the enemy.

2. In all cases of employment of riot control agents, immediate exploitation of its effects must be accomplished by ground forces, air strikes, and/or artillery.

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Section VI (continued)

G. Observations of USAIS Instructor in Vietnam, dated 28 February 1966.

Incident/Observation(s)

Recently a member of the Machine Gun Team of the USAIS Weapons Department completed a fact-finding trip to Vietnam. He visited all the American units in RVN, and listed below are some of the questions that were asked and the answers that were received:

1. Question: "Which type of stoppage or malfunction occurred most frequently?"

Answer: "Asked of all units in Vietnam, most malfunctions and stoppages were caused by excess dirt and mud. No major stoppages due to malfunctions of parts or design of weapon."

2. Question: "Are the M60's habitually carried on offensive missions, Reinforced Rifle Squad, Rifle Platoon Company and Battalion Operations?"

Answer: "From all units, yes. From the personnel questioned by me (Platoon level), the best weapons in Vietnam were the M-16, M-60, M-79."

3. Question: "When firing from the assault fire positions, is the bandoleer attached to the gun, or is the extended belt used?"

Answer: "Although the extended belt wrapped around the gunner proved unsatisfactory, the bandoleer was unsatisfactory due to hanging on brush and pushing the weapon off balance. The cardboard box gets wet, and rounds hang in bandoleer. Some gunners place approximately 20 rds in feed way when moving; if enemy is engaged, the assistant gunner removes a bandoleer from ammunition can and clips another one hundred rounds on belt in feed way. Other gunners were using the bandoleers, but carried them in metal cans to keep dry. Also complained about pulling gun off balance."



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4. Question: "Are range cards prepared for the M60's when in defensive situations? Were they effective?"

Answer a: "The answer I received for this question was yes, however, the ones that I personally checked were incorrect."

Answer b: One unit stated that they used it once in the field, and it was very effective. I didn't see this range card or the reading, but checked a sample card for this unit and found it completely wrong.

5. Question: "What is the greatest performance deficiency of the machinegun in Vietnam?"

Answer: "From my own personal observations, I would say a basic lack of information concerning the weapon. This situation could be eliminated on the spot if Officers and Senior NCO's were more knowledgeable of the weapon and were willing to train their men. Most units that I encountered had junior NCO's that were very willing to learn but just didn't have the information available to them from Senior NCO's and Officers."

6. Question: "Are Rifle Platoon Leaders in Vietnam sufficiently knowledgeable on the capabilities and employment of machineguns?"

Answer: No, for same reasons stated previously. If leaders are knowledgeable, they are not training their gunners.

F. Lessons Learned (1 October -30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

1. Although the SS-11 missile was designed as an antitank weapon, it has been found to be a particularly effective weapon against a number of hard targets. In one recent operation, the VC took shelter in a masonry building. Attacks initially with 2.75 in rockets produced little results. A single SS-11 missile delivered from a helicopter quickly destroyed the house. In another action west of Pleiku, the SS-11 was used several times to blow barricades around a village where pinpoint accuracy was needed to avoid destruction of neighboring houses. The SS-11 has demonstrated its capabilities for destroying fortifications that can be observed from the air.

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2. Aidmen have found pole litters to be difficult to handle in dense vegetation such as occurred near the Chu Pong Mountain area. Consequently, litters were left behind, and improvised poncho litters were the only ones available. In some areas, litters could not be made due to the absence of small trees or limbs of suitable size, as in some of the elephant grass areas near Plei Me. In these areas, patients occasionally were evacuated to helicopter sites by hand-carry methods.

Lesson Learned

Tactical and medical units operating in areas described above should order and use the non-rigid poleless nylon litter, FSN 6530-763-7510, weight 3.5 pounds.

3. Several general malfunctions have occurred during recent operations with the M-16 rifle. These malfunctions with recommended corrective action are:

a. Rounds are difficult to extract after being in the chamber during the cooling-off period. Hot weapons should not be allowed to cool with a round in the chamber if the tactical situation will permit.

b. Magazines fail to seat properly because the magazine retaining clips become bent. Do not slam magazines into the weapon, which bends the retaining clips, but push firmly until the clips secure the magazine in place.

c. Selector switch freezes in one position. Selector switches should be kept well oiled.

I. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. The M-79 grenade launcher has proved to be an extremely effective small anti-sniper and anti-ambush weapon under conditions of reduced visibility. During experiments conducted by one rifle company, it was determined that the M-79 could also be hastily used as an indirect fire weapon. The procedure is to have grenadiers loosen the sling to a predetermined length and then place the butt of the weapon on the ground, elevating the muzzle and positioning the foot on the sling at the correct position, so that the desired elevation can be obtained and held. Through trial and error, an M-79 round can be "registered" in the desired spot, and the sling is then marked so that the grenadier need only replace his foot on the marked position on the sling, judge the correct deflection and fire.

2. There are many Marines who fail to use body armor in offensive operations. The claim being that it slows troops down and tires them out. This has been proven erroneous. During normal operations, conditioned Marines who have been required to wear the body armor (upper torso

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only), become accustomed to it and can readily keep up with troops not wearing it. Moreover, it has been found that troops wearing body armor move out with greater confidence and aggressiveness. Normal operations in Vietnam consist of search and clear missions and patrols, neither of which require extensive running or extreme physical activity. It is recognized, that in mountainous areas during hot weather, it may be necessary to dispense with the body armor due to the extreme physical exertion required. Numerous Marine lives have been saved by the "flak" jacket in this Division. There have been instances of the jacket deflecting direct hits with carbine bullets as well as close range grenade fragmentation. After noting these examples, Marines are easily convinced of the advantages of wearing body armor.

Lesson Learned

Publish the advantages of body armor. Dispel the misconception that troops cannot operate effectively in Vietnam while wearing it. In appropriate cases, require it to be worn.

3. Experience has shown that a great many VC mines are controlled detonation electric type. Most often, lead wires to mines are communications wire. Further, for expedience, most land lines are laid along the existing routes of communication. This situation makes it extremely difficult to distinguish VC lead wire from friendly communications lines. When communications wire is moved away from roads and other lines of communication, lead lines to mines and other foreign matter are more easily detected.

Lesson Learned

That in all forward tactical areas, all US laid communications wire be at least twenty meters away from utilized roadways. This produces an expeditious method for visual detection of mines electrically detonated from points off the roadway.

4. Rapid trail shifts and accurate relay of the 105mm howitzer can be accomplished by placing a GI can cover beneath the left howitzer wheel. The GI can cover permits the locket left wheel to spin easily through 6400-mils while keeping the axis of the panoramic telescope constant. One circular trail pit will accommodate both trails. The right trail rests against the rear wall of the pit, while the left one is blocked to fill the void between the spade and the rear wall of the trail pit.

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(Section VI continued)

J. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. Use of the high explosive and illumination round fired from the 155mm howitzer, M123A1, on perimeter defense has proved to be reliable and highly effective. Data below was derived from direct and illumination firings conducted by an Artillery Battalion in RVN.

| <u>PROJ</u> | <u>CHARGE</u> | <u>ELEV</u> | <u>FUZE SETTING</u> | <u>BURST RANGE</u> |
|-------------|---------------|-------------|---------------------|--------------------|
| HE          | 1             | 140         | 2.7                 | 550M               |
| HE          | 1             | 120         | 2.5                 | 500M               |
| HE          | 1             | 100         | 2.0                 | 425M               |
| HE          | 1             | 100         | 1.9                 | 400M               |
| HE          | 1             | 100         | 1.5                 | 350M               |
| HE          | 1             | 80          | 1.5                 | 275M               |
| HE          | 1             | 85          | 1.3                 | 250M               |
| HE          | 1             | 85          | 1.0                 | 225M               |

\*All bursts indicated were air; mean height of burst 20-25 meters.

| <u>PROJ</u> | <u>CHARGE</u> | <u>ELEV</u> | <u>FUZE SETTING</u> | <u>RN</u> | <u>FLARE BURNING TIME</u>         |
|-------------|---------------|-------------|---------------------|-----------|-----------------------------------|
| ILL         | 1             | 1000        | 5.0                 | 1200M     | Burned out on ground contact      |
| ILL         | 1             | 1050        | 5.0                 | 1000M     | Burned out on ground contact      |
| ILL         | 1             | 1100        | 4.5                 | 800M      | Burned out on ground contact      |
| ILL         | 1             | 1150        | 2.0                 | 250M      | 1/3 of flare burned on the ground |
| ILL         | 1             | 800         | 2.5                 | 450M      | 1/3 of flare burned on the ground |

\*Extreme care must be exercised to insure that flare is not wind blown into the battery area.

2. Use of the high explosive and illumination round fired from the 105mm howitzer for additional perimeter defense support.

a. The use of charge 1 lowers the muzzle velocity of the 105 howitzer to a point where simple computations can be made rapidly for shooting high explosive projectiles with time fuze. The mechanical time fuze, having a bore-safe feature, has a minimum arming time of 0.7 seconds. Thus a time setting of less than 0.7 seconds will render the fuze, "point detonating only," and must strike the ground or an object to detonate the round. Air burst can be achieved by the use

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of a standard elevation of 80 mils above the terrain at the perimeter and a fuze setting achieved by dividing the range (in hundreds) to the target by 3; for example, a range of 300 meters, a time setting would be 1.0 seconds. This approximation holds true for ranges out to approximately 800 meters.

b. Perimeter illumination using high angle fire.

Illumination of the perimeter using howitzers in position can be achieved with a simple system using charge 1. The use of charges greater than charge 1 may create malfunction of the parachute and produce a streamer. The use of maximum elevation or approximately 1150 mils will insure a trajectory that at 7.0 seconds fuze setting will give a burst at approximately 1000 meters HOB and 400-500 meters in front of the piece. In order to lower the HOB 100 meters, a setting of 5.5 seconds would be required. The average round will burn out just prior to impact with a time setting of 6.0 seconds or a HOB of 800 meters. In order to increase the range from the gun by 100 meters, the elevation is lowered 50 mils and the time increased 0.5 seconds for ranges over 600 meters. This is an approximation to a range of 1000 meters.

3. Current artillery TOE authorization for wire, WD-1/TT is inadequate to support "double" requirements imposed in Vietnam, i.e., maintenance of base camp areas and simultaneous requirements for landline communication during combat operations away from base camp area. A significant amount of wire is normally permanently installed in the base camp area, thereby reducing the quantity of TOE wire available for use in support of combat operations.

4. Due to the lack of survey control, three and four point graphical resection has been used to determine the battery center or battalion SOP. One of the resected rays is used as an orienting line. When survey control has been brought in, the direction and location have been found to be about three to five mils and 20 to 40 meters in error. The azimuth gyroscope has been found to be erratic when used in the vicinity of helicopters and is only added weight for airmobile operations.

Graphical resection, both for location and direction, has been an acceptable solution to lack of survey control.

K. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. When one flare ship relieves another, a period of adjustment is required. The initial flares dropped by a flare ship are not always positioned effectively. During the initial adjustment period, the enemy takes advantage of darkness to probe defensive positions.

Lesson Learned

The ground commander must employ artillery and mortar illumination rounds until the flare ship has established its pattern. The

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ground commander must relay the maximum ordinate or artillery and mortar fire to the flare ship so that it may operate safely.

2. The 3.5 inch rocket launcher, although useful in villages and along the edges of clearings, has proven cumbersome and ineffective in heavily vegetated areas.

Lesson Learned

When available, the M-72 LAW is far more effective in the jungle than the 3.5 inch rocket launcher.

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Section VI (continued)

L. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

Incident/Observation(s)

Free drop of supplies due to the non-availability of landing zones. A lack of landing zones in the recent area of operations dictated that all supplies had to be free dropped. Initial free drop supply deliveries were accomplished by dropping unrigged unsecured supplies from a moving helicopter. This was found unsatisfactory as the dispersion pattern of the unsecured supplies was approximately 300 to 400 meters. To limit this unsatisfactory dispersion pattern, we utilized the A-21 (door bundle) container which will contain a load of 500 pounds. It was determined that two A-21 bundles could be dropped simultaneously, thereby delivering 1000 pounds of supplies to the unit on the ground.

Lesson Learned

A-21 containers can be used to effect a satisfactory delivery of supplies to units located in areas where LZs are not available. To lessen the impact of the A-21 containers and reduce breakage, the poncho parachute can be used when standard parachutes are not available.

M. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Abrasion of helicopter rotor blades. The operation of UH-1 series of helicopters in the sandy environment along the coastal regions of Vietnam creates an abrasion problem with main and tail rotor blade leading edges often requiring premature replacement. Main rotor blades have required replacement upon the accumulation of 284 flying hours as opposed to normal replacement time of 2500 hours. Application of vinyl tape as outlined in TM 55-1520-210-20 to the leading edge of main rotor blades has not been effective in the reduction of abrasion.

To reduce abrasion, take-off's and landings should not be accomplished from a hover when operating in sandy areas.

N. 173d Airborne Brigade (1 October 1965-31 December 1965), dated 14 March 1966.

Incident/Observation(s)

The weapons systems used by this brigade have proven to be only partially dependable. The M-16 Rifle and the M-79 Grenade Launcher are very effective. The simplicity, light weight and fire power make these weapons especially suited for jungle warfare. The M-72 LAW has not proven

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as successful. In tests performed by this brigade, this weapon has failed to function as much as 50% of the time. Exposure to moisture is suspected to be the primary reason for the malfunctions.

A special carrying case has been developed, and work is continuing to improve the case in an effort to hold out moisture and make the M-72 more dependable.

O. 173d Airborne Brigade (Operation SILVER CITY), dated 15 April 1966.

1. Incident/Observation(s)

The time durability of the basic load of ammunition for the M-16 rifle is very short unless definite control measures are established to limit firing on full automatic.

2. Incident/Observation(s)

When two or more battalions work together, a centralized control center for all artillery and mortar fire must be established.



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Section VII. Individual Inquisitiveness and Alertness.

A. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

Incident/Observation(s)

"Reporting of the enemy situation by units was improved. It was recognized, however, that there was a reluctance to estimate the size of the enemy force in contact, after contact was made. This initial estimate is important. Just reporting heavy contact is not sufficient. Commanders must go ahead and make an estimate with acceptance that it is subject to change. This permits the next higher commander to more properly plan ahead."

B. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

All soldiers should beware of the following:

- a. Dead foliage. It may be old camouflage over a trap.
- b. Tied down brush. It may be a firing lane for an ambush site.
- c. All civilians until they are properly identified.
- d. Villages when no children are visible. It may be an ambush.
- e. Boats around villages. They may contain punji stakes, mines and booby traps.
- f. Booby traps in areas which you reoccupy.
- g. Likely ambush sites. Stay alert.
- h. Obvious by-passes at blown or damaged bridges. They may be mined.
- i. A decrease in troop alertness during long operations or periods of inactivity. Death comes swiftly in the jungle.
- j. Unpurified water, it likely contains germs.
- k. Indigenous modes of transportation. Taxi drivers have been known to transport GI's to their place of execution.
- l. Traveling alone outside your base compound. Use the "buddy" system.

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Section VII (continued)

C. Operation PAVEY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

1. Battlefield police is tremendously important. The VC will police up everything, including spent casings, to use against us. Particular note should be taken when casualties are being evacuated that the casualty's weapon, equipment and ammunition are also evacuated.
2. The American soldier has a tendency of immediately going to the aid of a wounded soldier. VC snipers have capitalized on this and purposely wound a man to kill two or three going to his aid. The immediate response should be that of laying down a heavy base of fire both grazing and tree spray in the direction of the sniper and the wounded man rescued by fire and maneuver.
3. Troops should take advantage of walking in APC or vehicle tracks or in others' footsteps in locations where mines are being used.
4. The importance of good leadership at the squad level is immense. Priority of work in the defense must be digging in and cutting fields of fire. Force and professionalism of NCO's becomes the vital factor when troops are tired and weary.

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Section VII (continued)

D. 1st Brigade, 101st Airborne Division, Operation  
HARRISON, dated 12 April 1966.

Incident/Observation(s)

It is difficult for a small unit leader to maintain a proper balance between aggressiveness and patience. If a Reconco patrol is unable to exploit an enemy sighting, it must observe the enemy's direction of movement and often allow the enemy to pass unopposed. This gives the enemy a false sense of security in an area we have infiltrated and on occasion provides another Reconco patrol an opportunity to ambush a relaxed enemy force.

Lesson Learned

The actions of Reconco patrols, which must aggressively exploit enemy targets of opportunity, must be carefully monitored to achieve a proper balance between exploitation and disclosure of friendly presence.

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Section VIII. Communications.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-20 (RL), dated 16 October 1965.

1. Incident/Observation(s)

a. Accuracy is far more important in field wire and cable installation than speed.

b. The base camp concept of operations requires semi-fixed installations rather than mobile, and for these installations the unit should plan to have an air conditioned semi-permanent building in which to operate the following equipment:

- (1) Radio sets of 100 watt output or more.
- (2) TRC 24 and carrier.
- (3) Telephone switchboards.
- (4) Cryptographic equipment.
- (5) Teletype equipment.

Lesson Learned

"Air conditioning successfully increases the operating life of electronic equipment by reducing temperature, humidity and dust. A secondary consideration is the comfort of personnel who operate the equipment in the closed shelters."

1. Incident/Observation(s)

a. "The base camp concept requires about 100% increase in the number of field telephones in the TOE. This also makes a larger switchboard necessary."

b. "Back pack radios are more important to this type of operation than vehicle-mounted ones. The back pack radio should be voice or CW and should have at least a 30km range on voice."

c. "A helicopter transportable radio is required when the battalion or brigade goes on an Air Mobile Operation. This radio should be capable of transmitting voice, CW and RATT at a range of at least 100km."

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Section VIII (continued)

F. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. In a static defense situation, wire has become the primary means of communications within the battalion. Lines to platoons, to outposts and OP's, as well as lines within battalion, create a need for many telephones and cause confusion at the company CP because of the large number of phones which terminate there.

Lesson Learned

Utilize the SE-22 at company level. When there are not enough switchboards, use a TA-125, jumping the terminals so that one phone is on the battalion lines and another on the company local lines. This limits the number of phones within the company CP to two and allows for an incoming call from battalion to be dispatched to any platoon outpost or forward observer. Utilization of one EE-8 and one TA-312/PT aids in determining which phone is ringing at the company OP, thus eliminating the troublesome chore of answering the wrong phone on an incoming call.

2. There is often a need for the RC-292 antenna on operations. However, the weight and bulk of the complete unit make it impractical to handle in fast-moving offensive operations.

Lesson Learned

On offensive operations, carry only the antenna base, antenna sections, coaxial cable, one mast section and the antenna bag. This abbreviated antenna can be tied in a tree or to a pole without loss of effectiveness. A saving of 30 pounds is realized.

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Section VIII (continued)

C. Operation FALDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 13 February 1966.

Incident/Observation(s)

This operation involved a limited Objective, Seizing and Securing with two companies in the attack and the third company following in a destruction role. Wire was used with all companies both in the attack and extraction phases with tremendous success. This reduced radio traffic to a minimum and denied the enemy, who demonstrated a monitoring and jamming capability, of obtaining information or interfering with the execution instructions of the plan. The enemy completely jammed the Battalion Command frequency prior to the on-call preparation being lifted, in an effort to delay the obvious order to execute the attack. Wire was used to issue these instructions and to switch to the alternate frequency.

D. U. S. Army Vietnam, dated 28 March 1966.

1. Since all RATT operations in Vietnam must be secure, the need exists for all radio teletype sets to be able to accept the TSEC/KW-7. Several units arrived in-country with unmodified AN/GRC-46B radio teletype sets. Modifications kits are not presently available in the theater.

Lesson Learned

Units deploying to this theater should insure that modification of AN/GRC-46B is accomplished prior to departure from home station.

2. Communications security is greatly jeopardized when units arrive in-country without sufficient quantities of low level operations codes and authentication/numeral codes. The lead time for supply of NSA produced codes is 90-120 days.

Lesson Learned

All units deploying to this theater should depart home station with a sufficient supply of codes to sustain their requirements until automatic distribution can be established.

3. Frequently during combat operations, units have no ground station in forward areas capable of automatic retransmission. The Retransmission Cable Kit, HK-456/GRC may be employed with two AN/PRC-25 radios to provide a lightweight, portable ground station capable of automatic retransmission.

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4. In cases of rack-mounted equipment where there are 3 or 4 chassis, insufficient ventilation causes extreme heat to build up, resulting in overheating of the equipment.

Each chassis can be withdrawn from the rack, as cabling allows, staggering the chassis so that cooler air is allowed to circulate through them. (The vans should be air-conditioned if at all possible.)

5. It is necessary to park vehicular mounted electronic equipment at communications sites for extended periods of time. Due to the inter-connection of power and signal cables, it is impossible to exercise the vehicles. Under the circumstances, brakes tend to rust and become frozen. Furthermore, drive trains become rusty and stiffen due to the lack of lubrication.

Vehicles should be blocked underneath the axles so as to allow free turning of the wheels and periodic exercise of the drive train.

6. In most of the operating sites in the Vietnamese II Corps area, a considerable amount of sand and dust blows into equipment shelters and equipment racks. This clogs ventilating ducts, causes abnormal wear on rotating parts (bearings, motor brushes, etc.) and results in erratic malfunctions of switch and relay contacts.

Air-conditioning vans so that they can be kept closed will reduce this problem. Small, hand-portable vacuum cleaners are needed to remove as much dust and dirt as possible before it accumulates to excessive levels.

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Section VIII (continued)

F. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Communications with small patrols utilizing the AN/PRC-25 radio. In any type of terrain voice carries great distances, especially at night. Patrols utilizing a radio sustain great risks to security when required to transmit situation reports, locations and other information to their controlling unit during the night.

Lesson Learned

A system of signals made by depressing the push-to-talk button on the handset, which in turn breaks the squelch on the receiver of controlling unit, is practical. The best policy is that the controlling unit query to patrol with questions that can be answered with a yes or no. Breaking squelch once indicated an affirmative answer, twice a negative answer, and three times indicating 'I do not understand, say again.' This system can also be utilized at any time when communications is such that one party cannot make voice transmissions, though it can receive loud and clear.

2. Incident/Observation(s)

Establishment of adequate communications from air and helicopters utilizing the AN/PRC-25 radio. When a unit is unable to obtain a Command and Control ship for its use, it must utilize a helicopter which has no internal radios for Command and Control or relay purposes. Therefore, the AN/PRC-25 must be used with a short antenna. This does not provide adequate communications.

Lesson Learned

When a Command and Control ship is not available for use and other helicopters must be used for Command Control or airborne relay purposes, it is advisable to specifically request a ship equipped with the externally mounted antenna, adaptable to the AN/PRC-25 radio. A helicopter so equipped is actually better in many respects than a Command and Control ship in that observation capabilities of passengers is increased greatly and secondly, the ship is more maneuverable due to the absence of the weight of the console.

3. Incident/Observation(s)

Maintaining communications in areas of dense, mountainous jungle utilizing the AN/PRC-25 radio. The problem was foreseen, and units deployed with field expedient directional antennas. However, it was quickly observed that this antenna was very difficult to erect and even if



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erected properly, was not capable of giving the desired results. Consequently, attempts to utilize the RC-292 antennas were initiated. The antenna was lowered through the jungle canopy to a unit via helicopter. When properly located, this antenna gave satisfactory results. The bulk weight of this antenna, however, necessitates that the components be broken down and distributed to various personnel for easy transport through the mountainous terrain.

Lesson Learned

The antenna RC-292 must be carried and utilized at all times by a rifle company, regardless of difficult terrain.

F. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Employment of Retransmission Cable Kit, MK-456/GRC. Frequently during combat operations, units have no ground station in forward areas capable of automatic retransmission. The Retransmission Cable Kit, MK-456/GRC may be employed with two AN/PRC-25 radios to provide a lightweight, portable ground station, capable of automatic retransmission.

G. 25th Infantry Division (United States), dated 1 January 1966-30 April 1966.

The following are some Lessons Learned during this period by two of the maneuver battalions:

1. There exists a definite need for the radio communications from platoon to squad in the defense. Even the unreliable AN/PRC-10 is better than no communications. Extra AN/PRC-10 radios could be brought in for use by the squads during the fight.

2. All patrol leaders should be given the battalion command net frequency in case the company command net ceases to function. Battalion can advise the patrol of the situation and provide indirect fire support as may be required.

3. A company can employ all the Claymore mines it can get in the defense. They can be employed in depth with the majority being placed right next to the defensive foxholes. As mentioned above, they also would be useful to place in Viet Cong trenches leading into the position which cannot be covered adequately or occupied.

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Section IX. Organization.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-20 (RL), dated 16 October 1965.

1. Incident/Observation

The Infantry Brigade staff sections as organized under TOE 7-47E are not adequately manned to meet the requirements of operations in Vietnam. The 2d Brigade has been conducting continuous 24-hour operations since its arrival in Vietnam and will continue to do so indefinitely. Operations in S2, 3, 4 and communications fields run around the clock, seven days a week. In addition, the Brigade conducts frequent operations away from its base camp area. These operations require the Brigade Headquarters to split into forward and rear elements and cause a further load on staff section personnel. Even though the Brigade will soon be operating under a division headquarters, there will be no periods when the Brigade is in reserve or without attachments.

Lesson Learned

The Infantry Brigade staff sections should be organized along the lines of the Separate Infantry Brigade TOE 7-102E.

2. Incident/Observation

"Each rifle company should have one or two four-man demolition teams."

Lesson Learned

Recommend the 106RP section of the weapons platoon be cross-trained for demolitions work.

E. Operational Critique, 173d Airborne Brigade, 1 - 8 January 1966.

Incident/Observation(s)

"Unit requests for support battalion demolition teams must be made through the S-3 channels, rather than through the logistics chain. The job to be accomplished by the teams must be stated so that the team can be appropriately tailored and equipped."

C. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

"Experience has shown that one staff officer should be given the additional duty as Counterinsurgency Officer. The functions of

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this officer fall within both the area of the S-2 and Legal/Civil Affairs Officer. The Counterinsurgency Officer's duties would include maintaining listings of the villages and hamlets and size of the Popular Force units in each village. The CI Officer acts as coordinator with village and district chiefs in such areas as intelligence from the local populace, coordinator of operations and security with Popular Forces and supervisor of the people to people program. Therefore he should have a working knowledge of the Vietnamese language. The Legal/Civil Affairs Officer serves as an assistant to the CI Officer. This system has proven very effective in the area of control.

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(Section IX continued)

D. U. S. Army Vietnam, dated 26 March 1966.

Incident/Observation(s)

1. Each tactical headquarters requires immediately responsive aerial surveillance/reconnaissance support. The division has an organic ASTA platoon which can be responsive to the Division G2. Separate brigades and field force headquarters do not currently have this direct and immediately responsive support. General support (Air Force and Army Aviation under control of higher headquarters) is not sufficiently responsive to immediate requirements because of insufficient resources and inadequate communications links.

Lesson Learned

All tactical commands from separate brigade up should be allocated immediately responsive aerial surveillance/reconnaissance, either in direct support or as an attached unit.

2. Counterinsurgency operations are as much political and economic as they are military. When large numbers of troops must be committed in a counterinsurgency situation, the economic and political situation has normally deteriorated to the extent that civilian agencies cannot cope with the problems. Many of these problems then, in part at least, become the responsibility of the military. Units have arrived in Vietnam without, or with understrength civil affairs staffs.

Lesson Learned

It is essential that G5 or S5 staffs become a part of all military units from Field Army to battalions at the beginning of operations and that personnel with broad training in political science or counterinsurgency fill the positions at the division or higher level. At regiment, brigade and battalion levels more limited training or experience in civic action will suffice.

3. When employed using the airmobile concept, personnel and equipment are reduced to the minimum essential to accomplish the mission. A command and control element accompanies the firing batteries and consists of three 1/4-ton vehicles and the Battalion Commander's vehicle. Personnel are limited to approximately twenty-five and include the S-3, an assistant S-3, two operations NCO's, four RTO's, one survey NCO with two EM, one commo LCO with one to three EM, an S-4 representative, two medics, a fire direction officer, chief computer and five to seven fire direction personnel.

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Section IX (continued)

E. 1st Brigade, 101st Airborne Division, Operation  
HARRISON, dated 12 April 1966.

Incident/Observation(s)

Experience gained during HARRISON demonstrated that the system of sending IPW teams to battalion locations as needed worked very well. We found that better use was made of the team's capabilities of interrogation and document exploitation, the battalions were supported better and the work load was more evenly spread.

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Section X. Operations.

A. Letter, MAC J343, MACV, subject, "Lessons Learned No 54: The Battle of Ky Phu (U)," dated 27 January 1966.

Incident/Observation

The above source deals with Lessons Learned resulting from a highly successful counter-ambush action during operation "Harvest Moon," conducted by 3d Marine Division.

Essentially, this action can be termed a movement to contact culminated by a VC ambush designed to destroy the entire Marine march column."

A Marine battalion approached Ky Phu in a tactical column with an advance guard company, a main body consisting of a rifle company and L/S Co, and a rear guard company. Security elements were operating along the flanks of the advance guard some 500-700 meters from the route of march, about 100-150 meters to the flanks of the main body, and some 200 meters to the flanks of the rear guard.

During this action, three separate engagements occurred: The initial attack on the advance guard, the attempt to encircle and destroy L/S Co, and the attack on the rear guard. All three attacks were effectively foiled by aggressive leadership, rapid and effective response to orders, fire power, and use of supporting arms, resulting in severe losses being inflicted on the attacking VC forces.

Lessons Learned

"This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied."

1. "Rapid and aggressive attainment of fire superiority by maneuver, coupled with employment of all organic and all available supporting arms (e.g., armed helicopters and 155mm artillery), will provide the margin of victory."

2. "Where effective centralized control of supporting weapons cannot be realized, supporting weapons (e.g., 81mm mortars attached to the advanced guard) should be attached to the unit most likely to experience contact."

3. "Radio discipline is essential. In this action, due to personnel casualties and destruction of radio equipment by initial enemy fire, only the battalion tactical command net was operating effectively. Outstanding net discipline was maintained, however, allowing

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effective control of the battalion by its commander, adjustment of artillery fire, and control of armed and MEDEVAC helicopters."

4. "Aggressive leadership was exhibited by all commanders, to include the immediate assumption of command of B Co by the artillery forward observer when the company commander was killed."

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(Section X continued)

B. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. During the conduct of operations, it was learned that the Viet Cong quickly became aware of the outer extremities of the Area of Operation (AO) assigned a US/FWMAF unit; thereafter, the VC would withdraw outside the AO until the operation had terminated.

Lesson Learned

To offset this weakness, the requested AO's are now considerably greater than the intended area of operations.

2. Short duration operations (3-5 days) generally met with limited success. It was learned that Viet Cong units would avoid contact and flee into safe havens, to return upon completion of the operation by US/FWMAF and ARVN units.

Lesson Learned

By extending the duration of search and destroy and securing operations to 2-3 weeks, the Viet Cong who had initially evaded the friendly forces found it necessary to return to their area of previous domination for resupply and morale purposes. Their return in many instances resulted either in a substantial willingness to fight, or in ralliers.

3. Each incoming unit should have a sponsor unit. If the sponsor unit serves no other purpose than to write to the unit while it is still in CONUS, obtain information on the arrival of the advance party and any unit impedimenta that is scheduled to arrive before the advance party and to prepare for the unit's arrival and safe transit to their ultimate location, they have made a valuable contribution.

A sponsor unit should be appointed for each unit deploying into an overseas area.

C. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. Combined operations with CIDG and ARVN units have been very successful. It is advisable, however, to send a liaison officer with a radio with these units during an operation in order to maintain close communication and to verify reports.

Lesson Learned

Some form of communication and liaison must be provided when operating with ARVN units.



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2. When a unit conducts a search of a village, the presence of National Police or local officials results in greater cooperation by the villagers with the search parties. National Police and local officials are often able to point out suspects, question the villagers and act generally as a go-between for the searching unit.

Lesson Learned

The use of National Police or local officials should be considered when planning a search operation.

3. VC rice caches, particularly the larger ones of 20 to 100 tons or more, are often located in inaccessible areas and are extremely difficult to extract.

One solution which is sometimes possible is to arrange with the District Chief or Province Chief before an operation begins to have 200 to 300 porters available and ready to enter any area where rice caches may be found, under the protection of US forces. Evacuation by helicopters has sometimes been accomplished, but the suitability of employing them to remove large quantities of rice is questionable.

4. As an alternate to extraction of large rice caches, destruction may sometimes be indicated or required. This is a difficult problem and one which has not yet been completely resolved. Attempts to burn rice with gasoline, white phosphorous and other incendiaries have been only partially successful. Rice spoilage kits (not yet available) appear to be suitable only for relatively small quantities. The method which seems most effective is to dump rice into a stream, into a rice paddy filled with water, or in rainy weather, simply to scatter it on the ground.

Lesson Learned

The best method of destroying rice is to subject it to the deteriorating effects of water.

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Section X (continued)

D. 1st Infantry Division Lessons Learned, dated 15 March 1966.

Incident/Observation(s)

Compromise of tactical plans is a constant problem. One possible source of compromise stems from the requirement to submit in advance a request to ARVN for operations in an area outside the assigned tactical area of responsibility. This request is then processed by ARVN through Province and District Chiefs prior to approval.

To overcome the possibility of compromise, requests are made for much larger areas than are required for an operation. Deception plans effectively supplement actual plans by camouflaging the primary intention.

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Section XI. Administration and Logistics.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-25 (IL), dated 16 October 1965.

1. Incident/Observation

a. "The Brigade Supply Section is composed of an 18-man forward supply section and a 5-man augmentation to assist in office functions which the section would not be responsible for if the brigade were not operating alone.

b. "Without additional equipment (not TOE to the section), e.g., forklifts, reefer units, fuel system supply point, 5000-gallon fuel tanker, etc., it would not have been able to effectively support the brigade."

c. "The problem areas of maintenance have been in Signal and Engineer items. The high rate of failure in Signal items can be directly traced to the moisture problem."

d. "Minor cuts and abrasions must be treated promptly to avoid infection. The healing period in this climate is much longer than in CONUS."

2. Incident/Observation

"The jungle fatigue is quick drying and provides good ventilation, whereas the regular fatigues are more restrictive and take much longer to dry. Continuous movement and climatic conditions are hard on the regular boot, and they last on the average about 2 months. The present jungle boot is excellent."

Lesson Learned

"Jungle fatigues and jungle boots should be issued to all personnel."

3. Incident/Observation

a. "Each individual coming to Vietnam should be issued some type of gym shorts and sandals to be worn within base camp areas. This would greatly reduce the number of cases of immersion foot and body rashes."

b. "Develop a new type air mattress for issue. The present one is unsatisfactory. It is easily punctured by branches and twigs. The air valve often splits or comes out of the air mattress."

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c. "Develop and issue a lightweight poncho and drop cloth. The present poncho is too heavy and cumbersome and does not keep the individual dry. A lightweight drop cloth would provide the individual protection against the moisture of the ground when he is sleeping at night."

d. "Issue one (1) lensatic compass per fire team. This is an absolutely necessary piece of equipment in Vietnam."

8. 1st Cavalry Division, 15 November 1965.

Incident/Observation(s)

1. "Casualties are a critical problem. When fire is pinning down individuals, one casualty will cost one or two more men attempting to get to him."

Lesson Learned

Leaders at all levels in contact under fire must act cautiously in getting casualties out. Troops must not get so concerned with casualties that they forget the enemy and their mission.

2. "Evacuation of casualties from the areas of contact in this action was a problem. TO&E litter bearers would have been a big help. As it turned out, fighting strength had to be used to carry out a wounded man (3-4 required) or to assist many walking wounded. (One man at least required in many cases.)"

3. "When a man is killed or wounded, his weapon and some of his equipment get separated from him in many cases. Some of our equipment was evacuated all the way to Qui Nhon. Many enemy weapons which we captured and sent out with friendly KIA and WIA were never seen again."

Lesson Learned

An S-4 representative, officer or NCO with assistants, must be present at least in the battalion forward aid station and at the collecting company at Forward Support. Maintain a weapons pool, vicinity of the B1 CP, of weapons taken off friendly KIA and WIA for immediate re-issue for weapons damaged in the battle area.

4. "Rations are no problem. Few men eat much when in a heavy action, however, water is extremely critical."

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C. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

Incident/Observation(s)

1. Policing the battlefield of friendly and enemy equipment is time consuming and can hinder the pursuit of the enemy.

LESSON LEARNED

In some instances it may be appropriate to accept the loss of some equipment as a combat expedient.

2. Whenever a 155 howitzer battery is attached to the Brigade, additional ammunition handlers must be provided the LOC to handle the additional and larger size rounds.

D. Operational Critique, 173d Airborne Brigade, 8 - 14  
January 1966.

Incident/Observation(s)

A train headquarters established in the operational area from elements of the support battalion is of great advantage. This small headquarters will coordinate all logistical support activities.

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Section XI (continued)

E. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

The reaction time for medical evacuation missions was sometimes increased during the initial stages of airmobile assaults due to lack of familiarity by medical evacuation pilots with PZ's and LZ's being used by specific units. Frequently med Evac ships have had to search unfamiliar terrain for the exact LZ's, thus losing valuable time.

Lesson Learned

Medical evacuation helicopters should follow major troop lift formations during the initial assaults to determine the LZ's being used and to become terrain oriented. Further, the presence of med Evac ships in the initial assault echelon greatly speeds evacuation at that critical time.

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Section XI (continued)

F. Operation PADDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

1. Preparations in the form of evacuation bags and a vehicle should be on hand in the vicinity of the Forward Medical Evacuation Center to evacuate KIA's as quickly as possible without utilizing Forward Logistic Areas.

2. Planning provisions should be made to make immediate replacement for aidmen who become casualties.

G. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. From significant battle and non-battle personnel losses during the initial commitment of the 1st Air Cav Div, it was learned that plans for the replacement of these losses must be prepared well in advance. If provisions are not made to compensate for these losses before they occur, units will continually engage in operations at less than 100% present for duty. Therefore, it is necessary that requisitions be based on 110% of authorized strength in order to attain and maintain present for duty strength of 100%.

2. Experience in some units has shown that wear-out period for boots and fatigues is only three weeks under the most adverse conditions. Fatigues tear and rip frequently, and boots rot from constant dampness.

Lesson Learned

Requisitioning objective should be increased to assure adequate stockage.

3. Refrigeration facilities for mess halls are essential. Sanitation and temperature conditions in Vietnam promote rapid spoilage of perishable foods.

In the absence of standard refrigeration units, CONEX containers can be provided with sand bag insulation to provide iced cold storage facilities.

H. 1st Air Cavalry Division (Airmobile), 3d Battalion, 18th Artillery, dated 28 March 1966.

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Incident/Observation(s)

Unit personnel attendant at unloading of equipment.

a. When the equipment for this unit was being unloaded at Qui Nhon, battalion representatives maintained a 24-hour-a-day watch over all equipment being unloaded. As a result, all of our equipment was promptly and properly recognized and secured. Other units who did not have representatives on the beach had equipment missing.

b. All units having equipment being unloaded from a vessel should maintain representatives at the unloading site until such time as they have received all of their equipment.



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Section XI (continued)

I. 173d Airborne Brigade (1 October 1965-31 December 1965), dated 14 March 1966.

1. Incident/Observation(s)

Vietnamese interpreters. The majority of Vietnamese interpreters thus far used by this brigade were not fully qualified or were not dependable.

Better qualified personnel must be provided in order to quickly and efficiently exploit the advantage offered by VC suspects, prisoners and documents.

2. Incident/Observation(s)

The technique of establishing a Forward Medical Clearing Station at the Brigade Forward Support Base during combat operations proved very successful. Many lives were saved by the immediate medical care available at the station. In addition, personnel with minor wounds, illnesses or even dental problems could be treated and returned to duty immediately.

J. 1st Infantry Division Lessons Learned, dated 15 March 1966.

1. Incident/Observation(s)

The shipment of finance personnel and records by surface transportation during deployment of the division to Vietnam resulted in numerous personnel receiving late pay. This problem could have been solved if finance personnel and records had been air lifted. This procedure will permit the finance office to retain control over its personnel and records for a longer period of time, allowing finance services to be maintained until departure of troops and immediately reinitiated upon their arrival at destination.

Lesson Learned

Airlift of finance personnel and records for units deploying to Vietnam will result in uninterrupted finance services.

2. Incident/Observation(s)

The quantity of medical expendable supplies for units deploying to Vietnam should be increased.

Medical expendable supplies for deploying units was limited to 15 days. This amount was found to be inadequate due to resupply delays initially experienced upon arrival in-country.

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Medical expendable supplies accompanying units deploying to Vietnam should be increased to 30 days to overcome initial delay in resupply efforts.

3. Incident/Observation(s)

Intracaths have been used in Vietnam with a high degree of success. In combat situations, necessity for first aid and resuscitative care requires the rapid administration of blood and I.V. fluids without having to resort to time-consuming methods of venous cut-down. Use of plastic intracaths or venocaths offers the physician and/or aidman a quick action method of administration of fluids.

Intracaths and venocaths should become standard items available for mass issue to medical facilities throughout existing and programmed medical channels in Vietnam.

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Section XII. Civil Affairs.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-28 (RL), dated 16 October 1965.

Incident/Observation

Operating separately, Brigades should have a Civil Affairs Section.

Lessons Learned

1. "Operating as a separate brigade, the unit Civil Affairs Section should consist of three members as follows: Major (branch immaterial), Team Chief; SFC E7, NCOIC; Sp 5, Clerk Typist."

2. "All personnel should be school trained in Civil Affairs or have experience in this or related fields (Psychological Warfare, Military Government)."

3. "Two interpreters, fluent in English as well as the language of the target people, are an absolute necessity."

B. After Action Report, 1st Cavalry Division, dated December 1965.

1. Incident/Observations

a. "One of the essential ingredients of success in reducing the equipment and manpower required to achieve the aim of an operation is the integration of a preplanned Psywar program specifically tailored to the target area."

b. The area scheduled for pacification should be assigned to units far enough in advance to permit the planning and organization of the psywar program BEFORE the beginning of the operation.

c. "Contingency funds should be made available at battalion level for the local purchase of candy and supplies peculiar to the area of operations. This would have a secondary effect of stimulating the local economy."

d. It is recommended that military offensive operations be carefully evaluated to preclude unnecessary property damage and personal injury to the civilian population.

e. It is considered vital that operations be of sufficient duration so as to have a stabilizing and lasting effect in the area of operations.

2. Incident/Observation

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National Police familiar with the area of operations must accompany military units on operations. They are vital both in the reestablishment of local civil order where VC influence has resulted in complete domination of the village leadership and in sorting out the VC from the local population.

3. Incident/Observations

A problem that caused a loss of momentum in search and destroy operations was the evacuation of rice and Viet Cong or Viet Cong suspects. A satisfactory system was worked out using two helicopters and one squad equipped with sandbags and shovels. The force was maintained on standby at the battalion CP. When a VC rice cache was located, the reaction squad was sent to sack and evacuate the rice. The same squad was also used to guard and evacuate captured VC or VC suspects, thus ground units were released quickly to continue their operations.

C. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

Incident/Observation(s)

1. "It was proposed that a team consisting of a corps representative; experts or advisors on handling, housing, feeding and evacuation of refugees; National Police representatives; and any other Vietnamese personnel deemed necessary be formed and attached or assigned to the Brigade. The corps representative would in fact be a GVN political advisor to the Brigade Commander. USAID or their US Agency representative may also be suitable."

Lesson Learned

There is always a problem of being cautious not to alert too many individuals on forthcoming operations for security reasons; therefore, this type of planning usually is done at the last minute and on short notice.

2. "As a combat expedient, with no policy announced on refugees, the best procedure is to get control of all civilians in the operational area and detain them for a limited period of time until a decision is made as to their disposition. They should be told that they are being supervised for their own safety while the combat operations continue in the area."

D. Operational Critique, 173d Airborne Brigade, 8 - 14  
January 1966.

Incident/Observation(s)

"In future operations it is recommended that if rounding up of livestock, or the destruction of VC houses and rounding up of civilians are required, that ARVN forces be brought in to perform these tasks."

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Section XII (continued)

I. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. Civic action projects should be undertaken through the local and national government channels to strengthen the individual support of the government. In daily contact with the people, every opportunity to emphasize the government of the country should be pursued. No matter how backward an area may seem, a definite route of communication to the people exists through the village and hamlet officials. Further, each time the local chain of communications is used, the cooperation between the local people and U. S. military is enhanced.

Lesson Learned

All civic actions be accomplished through established local officials. In an area where local leadership is weak or non-existent, efforts must first be directed toward the establishment of a viable government.

2. Emphasize participation by the local nationals in all local improvement projects. This should include not only the execution of work but also the initiation of ideas. The people are usually more willing to accept changes when they think they instituted them. Local improvement projects should be of the self-help or joint-work type. When projects are done for them, the people have a tendency toward complacency and expect other projects to be accomplished for them, while not really accepting or appreciating the results of the activity.

Lesson Learned

Units must insist that the local people do their share of all civic action projects on all levels. Whenever possible, the initiative for the conception of ideas and projects should be passed to the local officials.

3. The goal of Civil Affairs/Civic Action in RVN is to support the local government to the end that direct USMC involvement is minimized and the people become accustomed to seeking assistance from their own officials. Direct gifts of CARE, USOM or other materials (other than on appropriate gift-giving occasions, such as children's TET, Christmas, etc.) by Marines to the people tend to defeat the goal. Distribution of gifts during a large public gathering is not desirable, as the position of the local officials is seen as obviously a go-between.

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Section XII (continued)

F. Headquarters, Field Forces Vietnam Lessons Learned,  
dated 21 March 1966.

Incident/Observation(s)

Overcoming lack of troop awareness of current psy ops activities. Aerial loudspeakers are being used to exploit psychological opportunities that may be developed during tactical operations, such as isolated groups of refugees or potential ralliers. For maximum effectiveness, friendly troop units must be aware of the purpose of the broadcast and of any part they may be expected to play. Dissemination of such information through command channels is difficult and time consuming. A solution is to broadcast a translation of the appeal in the language of the friendly troops, English or Korean, explaining at the same time what is expected of ground units. A broadcast of this type is particularly useful when the appeal consists of directions on how to rally or surrender in that if special considerations are involved, it insures that the ground troops understand these as well. This practice also has the added benefit of providing an on-the-ground check of loudspeaker effectiveness and a chance to determine if any offset in flight path is required.

When tactical and security conditions permit, this technique should be used.

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*This is a draft  
was retained as was  
+ published. Part  
of the draft for  
Calkins & Brown  
Comment.*

"This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied."

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LESSONS LEARNED - VIETNAM

Section I. Suggested Areas for Additional Training Emphasis.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSCPO-28 (PL), dated 16 October 1965.

Incident/Observation(s)

Additional emphasis on training for units deploying to Vietnam should include:

1. Land navigation.
2. Hand and arm signals.
3. Long road marches in hot weather through dense woods.
4. Live fire squad and platoon problems integrating all weapons within the platoon.
5. Independent squad, platoon and company operations of a minimum 3-5 day duration.
6. Increased live fire exercises emphasizing command, control and fire discipline.
7. Ambushes and patrolling in dense brush or jungle terrain.
8. Booby traps, mines and command detonated weapons.
9. Night vision and target detection at night.
10. Field sanitation and personal hygiene.
11. Construction (practical work) of bunkers and the laying of protective wire.
12. Indoctrination of the individual soldier stressing the capabilities and vulnerabilities of the enemy.

E. Combat Operations After Action Report (LACV/RCS/J3/J2), dated 30 December 1965.

Incident/Observation(s)

An ARVN Special Tactical Zone operation was conducted with the mission to attack along a road from a built-up area to a



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Special Forces Camp to relieve the pressure on the Special Forces Camp, which was under attack by the VC, and destroy all VC in zone. This operation was accomplished by combined forces to include Armor Cav, Infantry, Mechanized forces, Marines, Rangers, Artillery, Engineers, US and VII Airforces and US Army aviation.

Lessons Learned

"More effort and training must be placed on counter-ambush techniques - in addition to prestriking known ambush sites and utilizing long-range patrols to seek out the ambush, correct tactical formations, individual counterambush training and fire discipline when operating against the VC are necessary to prevent a successful ambush."

C. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. The LAM was effective against the anthills behind which the PAVN were hiding."
2. "Greater emphasis should be placed on the ability of personnel down to and including fire team leaders to adjust artillery and mortar fire."
3. "We must take time and every opportunity to train our men, especially our replacements, to perfection in small unit fire and movement and fire and maneuver. If we do not do this, men will be killed who would not otherwise be killed."
4. "The individual soldier must become at least as good as the PAVN in camouflage techniques and use of terrain and foliage to cover and conceal his movements. This must be emphasized."

D. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "Emphasis has been placed on offensive tactics to the point that we may have overlooked the basic facts that at some time the defense must be assumed. The small unit commander, notably the platoon commander, often fails to appreciate the use of defensive terrain or the proper employment of supporting weapons in the defense."

Lesson Learned

Do not emphasize offensive tactics in training to the detriment of the defense.

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2. Meeting engagements of small units on patrol have been the most frequent contact throughout all TACFs (Tactical Area of Responsibility). Initially, reaction by the point was not rapid enough to deliver fire at the elusive VC along trails. With practice, increased kills are being realized. Jungle lane type ranges with numerous surprise targets, have been a successful training device in reflex conditioning and increasing 'Snapfire' marksmanship.

3. The enlisted personnel presently in Vietnam have not been taught counterinsurgency. They are well versed in counter-guerrilla operations but have a lack of understanding when it comes to civic action visits to villages. The platoon commanders have a working knowledge of counterinsurgency. The enlisted personnel down to squad leader must be taught the overall picture of what the government is trying to accomplish in Vietnam. In this connection everyone should receive basic instruction on religious customs and superstitions of the people of the area in which they are working.

Lesson Learned

That all NCO schools begin to teach counterinsurgency operations. That a more dynamic program of area study be conducted prior to arrival into Asian countries.

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Section I (continued)

E. Staff Visit of USCONARC Training Team to US Army Tactical Units in RVN, dated 22 March 1966.

Incident/Observation(s)

1. During the period of 1-16 March 1966, a team of 4 officers visited US Army tactical units in RVN. The purpose of the trip was:

a. To determine the compatibility of the Republic of Vietnam oriented training conducted in the basic training and advanced infantry training programs with the actual needs of the infantry replacements assigned to United States Army units in Republic of Vietnam.

b. To insure that the CONUS training programs reflect all of the techniques required of the Republic of Vietnam replacement and to apply from information gained prompt realignment of our present individual training program where required.

2. This team visited 3 division headquarters, 10 brigades, 20 Infantry and/or Airborne battalions, 2 Artillery battalions and 1 Air Cavalry squadron.

3. Conclusions of the team were:

a. Commanders at all levels have high praise for the individual replacement soldier and consider him highly trained and well motivated.

b. The advanced infantry program, particularly at Fort Gordon and Fort Polk, should be reviewed in light of the specific areas stressed by all commanders as follows:

- (1) Personal hygiene.
- (2) Firing of the individual weapon during darkness.
- (3) The techniques of a perimeter defense.
- (4) Hand grenades.
- (5) Use of arm and hand signals.
- (6) Radio/telephone procedures.
- (7) Physical training and extreme physical endurance exercises.

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against "bunching-up."

(7) Squad and platoon formations with stress

(9) Patrolling, squad size.

(10) Fire discipline.

(11) Weapons safety.

(12) Quick reaction type training.

traps.

(13) Detection of punji stakes, mines and booby

malaria tablets.

(14) Water discipline and the necessity for using

(15) Target detection (Crack-Thump Method).

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Section I (continued)

F. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. US infantrymen, with limited additional training and using organic unit resources, have successfully conducted long range reconnaissance patrol operations. The nature of the enemy and terrain in Vietnam necessitates long range ground reconnaissance activities as a means of finding the enemy or confirming their nonexistence.

2. For most troops arriving in RVN, it is the first time that they have experienced field living conditions in an area of very low sanitary standards. As a result of poor individual sanitary habits and low resistance, a high incidence of gastro-intestinal diseases occurs.

The incidence of these diseases can be reduced by:

a. Establishment of field expedient handwashing facilities at urinals, latrines and mess halls. Provide NCO supervision to insure that troops wash their hands before entering the mess line.

b. Screen, disinfect, spray and wash latrines, urinals and mess areas.

c. Provide NCO supervision to insure thorough sterilizing of mess gear before entering the mess line and insure thorough cleaning of mess gear after eating.

d. Prohibit vehicles from driving in or near the mess and billeting areas to minimize the dust stirred up. Oil and/or wet down the areas around the mess hall.

e. Emphasize sanitation requirements in command information briefings. Post reminders on bulletin boards and in other prominent places.

G. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. Every major operation has been characterized by the use of helimobile displacement of artillery, aerial resupply, use of airborne Command and Control ships and aerial medical evacuation. These techniques are used extensively, and parachute operations infrequently (none to date by US Airborne units).

Lesson Learned

A need exists to change the present training emphasis for airborne units from parachute operations to helimobile operations.

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2. Prior to arrival of the US units in Vietnam, the Viet Cong had almost complete freedom of movement at night. Very few night operations were conducted by ARVN forces. This brigade initiated several night infiltration operations shortly after arrival which threw the VC into a state of confusion and caused them to be unsettled for many days thereafter. Night operations are now the norm for this unit. The results are: (1) Reducing casualties by fighting or moving under cover of darkness; (2) Gaining surprise over the VC; and (3) Destroying freedom of movement previously enjoyed by the enemy. Maximum use should be made of night observation devices to fully exploit our technological advantage.

Lesson Learned

Emphasis should be placed on training for and conduct of night combat operations in Vietnam.

3. Obtaining information of VC movements and locations is often the most difficult and frustrating part of any operation in Vietnam. Because of their penchant for withdrawing from and avoiding contact with US forces, our short range reconnaissance patrols are frequently unproductive. This situation presents many lucrative opportunities for the employment of Long Range Reconnaissance Patrols operating 25 to 50 kilometers from friendly units. The VC, thinking themselves safe from immediate contact with US forces, tend to use less care and caution than normal and can be observed as they assemble or move; subsequent operations can then be planned to destroy them. Such operations normally enjoy the advantage of surprise. Our own LRRP has been used extensively and has been very successful in detecting and reporting VC activity and movement.

4. Safety programs in CONUS are directed primarily toward traffic safety and range safety. These programs do little to prepare the soldier for living in an armed environment. After arrival in Vietnam, several serious accidents occurred due to the careless or thoughtless discharge of firearms.

CONUS safety programs should be expanded to include a thorough indoctrination on the safe handling of loaded weapons over extended periods of time.

5. US units in Vietnam make frequent air moves from one operational area to another. In many of these moves, C-123 and CV2B aircraft are used, although these aircraft are only rarely encountered during training in CONUS.

In view of the extensive use made of these aircraft in Vietnam, units should train in the loading and use of the C-123 and CV2B prior to deployment to Vietnam.

6. Because of the extensive use made of patrol tactics and the large number of semi-independent platoon and company missions

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performed by our units in Vietnam, the knowledge and skills of the small unit leader are more important than ever before. All squad/team leaders and other E4 in positions of responsibility, such as radio-telephone operators, must be thoroughly familiar with the adjustment of artillery and mortar fire and must be capable of calling for and adjusting TAC Air. Leaders of small units must be highly trained in cross-country navigation, map reading, use of field expedient antennas, ambush and counter ambush techniques and day and night patrolling, to mention just a few. The success of an operation frequently depends entirely on how well the squads and platoons perform their assigned tasks. Leaders must be trained to a very high state and then given combat missions and responsibilities commensurate with this training. Unit commanders who try to retain direct centralized control of their units in the jungled and mountainous terrain of Vietnam will not succeed as well as those who give mission type orders and who allow their leaders to take action within the scope of that assigned mission.

Constant and continued emphasis should be placed on training and preparing the small unit leader for combat in Vietnam, with emphasis on those skills designed to allow him to operate with self-confidence and assurance, even in the absence of orders.

H 1st Air Cavalry Division (Airmobile), 3d Battalion, 18th Artillery, dated 28 March 1966.

Incident/Observation(s)

Specialized unit and/or individual training.

a. Artillery units being deployed to the Republic of Vietnam are faced with the necessity of constructing field fortifications upon arrival in-country. Such units are required to construct gun pits and bunkers. Officers of heavy artillery units, or units with heavy equipment, are frequently faced with the necessity of classifying bridges over which their equipment will pass.

b. All individuals or units programmed for deployment to the Republic of Vietnam should receive specialized training in the construction of field fortifications. Officers being deployed with, or programmed for assignment to, units which have heavy equipment should receive some training on how to classify bridges.

Section I (continued)

I. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

Incident/Observation(s)

There is a need for trained rappelling teams within the supported units. The dense jungle growth which covers a major portion of our operational area prohibits the landing of helicopters in critical areas for missions as emplacement of forces, resupply and medical evacuation. Rappelling teams are normally equipped with pioneer engineering equipment such as power saws and axes used to clear areas and improve them sufficiently for use as helicopter landing sites. Rappelling also permits the emplacement of small forces such as long range reconnaissance patrols in areas where they could not otherwise be landed.

J. 1st Infantry Division, Lessons Learned, dated 15 March 1966.

1. Incident/Observation(s)

Physical conditioning. Combat operations, extreme heat and difficult terrain place heavy physical demands on the soldier in Vietnam. There is no substitute for intensive physical conditioning.

Troops in top physical condition upon leaving CONUS will become more easily acclimated to conditions in Vietnam.

2. Incident/Observation(s)

Maintaining contact. Once contact has been made, it must be maintained to keep the enemy off balance. The VC are well versed in the use of delaying tactics. The combat leader must be able to determine rapidly the size force he has engaged. The time lost in developing the situation may allow the main force to prepare an ambush, occupy defensive positions or escape, or maneuver to envelop the unit seeking to develop resistance. *FLB*  
All training situations must stress the importance of gaining and maintaining contact with the enemy. Rapid reporting of intelligence information will permit faster friendly reaction.

K. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Although cross cultural communication has been emphasized in counterinsurgency and military assistance advisor training, the results have been disappointing. The number of US personnel with adequate and useful knowledge of Vietnamese language and culture ranges from limited to virtually non-existent, particularly in tactical units. This limits the



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ability of: US unit commanders to communicate effectively with Vietnamese counterparts; advisors to influence counterparts; and of intelligence personnel to exploit the most profitable sources of intelligence information (i.e., captives, local populace and captured documents).

More US personnel must be trained as experts in Vietnamese language and culture. The use of ARVN interpreters should be considered as being only a stop-gap measure. It should be recognized that the use of the interpreters and translators presently available will result in some degree of misunderstanding when contact is made between US and RVN representatives.

*Use of native interpreters also provides an opportunity for Viet Cong infiltrators who speak English to obtain positions of trust and responsibility. A.B*

Section II. Training in Theater.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-26 (RL), dated 16 October 1965.

Incident/Observation(s)

1. "In country training has stressed primarily small unit tactics with emphasis on patrolling for units of company size and smaller. This training has included heliborne assault operations, counterambush and immediate action drills, demolitions, driver training, land navigation and long range patrolling."

2. "About four weeks of acclimatization and training are required for troops to become fully effective in country."

3. "Prior to departure from COMUS, the unit conducted speed marches and PT twice a day to somewhat acclimatize the troops to the conditions they would encounter. This training was effective in that the unit has suffered few losses due to heat exhaustion."

B. 173rd Airborne Brigade, date: 5-9 November 1965.

Incident/Observation(s)

Preparation of landing zones in jungle terrain continues to be a problem. During this operation, it was discovered that personnel with lumberjack experience produce five times the results of inexperienced personnel.

Lesson Learned

A requirement exists for a special team to be organized and trained for LZ preparations. This team should have the necessary equipment and would be on call during operations to rappel from helicopters into the proposed LZ.

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Section III. Joint Operations and Procedures for Airmobile Operations.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-28 (PL), dated 16 October 1965.

1. Incident/Observation

"Helicopter transport has many disadvantages that were not previously apparent. Helicopter units are prohibited by local regulations from landing on an insecure LZ unless the landing is preceded by artillery, armed helicopters and/or TAC air preparation. This, combined with the fact that two or more lifts are usually required, makes a surprise attack very difficult."

Lessons Learned

a. These disadvantages can be overcome to some extent by prestriking several LZs, feinting landing on one and then moving quickly to the primary LZ. Armed helicopters should strike tree lines around the LZ just prior to the landing. Troops must move off the LZ into pre-selected assembly areas so that the second lift can still be preceded by a prestrike on the remainder of the LZ perimeter. Use roads as LZs to change the pattern of using likely LZs in the vicinity of the target area.

b. "Avoid use of white smoke whenever possible since this color is SOP country-wide for marking air strikes on enemy locations. Likewise violet smoke is widely used for marking air med evac landing sites."

2. Incident/Observation(s)

a. "Six observation helicopters are completely inadequate for a brigade. As a minimum, it needs a platoon of 5 slick UH-1 and 3 armed UH-1 helicopters."

b. "Flying time per aircraft per month is 55 hours."

c. "CH-13S helicopters are inadequate as a command and control aircraft where there is no front line."

d. "OH-13S helicopters should all have dual control, no gun kits and be used for artillery observation, Air Force FAC, high reconnaissance and administrative missions."

e. "Each battalion area should have sufficient space to park 6 UH-1 helicopters."

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B. Combat Operations After Action Report (MACV/RCS/J3/J2)  
dated 30 December 1965.

Incident/Observation

"With the advent of increased fire support by US aircraft, it becomes imperative that a fire support coordination element be located at the senior field headquarters controlling any operation. The element must contain both US and GVN personnel with the necessary communications to accomplish the mission."

C. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. "Artillery, TAC air and Army Rocket artillery can be used at the same time without the loss of aircraft or effectiveness. The AFA and TAC air flew perpendicular to the artillery gun-target line in these cases where they simultaneously struck the same target areas. Other striking aircraft flew parallel to the gun-target line and beyond it."

Lesson Learned

Extremely close coordination is required between the FAC and the artillery liaison officer to accomplish the above.

2. "The pathfinder team was tremendous. Until they could get in around 1630 hours, 14 November 1965, all incoming aircraft had to be guided in and out by the battalion commander on the battalion command net."

Lesson Learned

A pathfinder team should go into every battalion-sized assault.

3. "The technique of holding a company (-) as an offensive striking force while recon elements of one platoon check specific areas out 50-100 meters from the landing zone worked out very well in this case. Also and most important, the assembled company (-) enables the battalion commander to hit any enemy attack quickly with a controlled unit."

4. "When a unit gets into an objective area, as soon as possible after landing, artillery fires should be brought in. This will possibly kill some PAVN nearby and certainly will cut down time on target when a fire mission on known enemy is called for."

*note short distances limited  
visibility because of dense vegetation.*

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Incident/Observation(s)

The advanced guard of an Infantry Battalion prematurely triggered a Viet Cong ambush that was established along a road bordered on both sides by a village.

Lessons Learned

1. When attacked along a road and air support is used, it may well force the VC to close on the road for safety. In this case, we killed a lot because we kept command of the road."
2. Air power can give very close support at night if they have something to guide on, such as a road in this case. Helicopters shot 2 to 3 yards off the road and the napalm was about 50 meters.

D. 173rd Airborne Brigade, date: 5-9 November 1965.

Incident/Observation(s)

1. The concept of attaching a FAC team to each infantry battalion to assist the airborne FAC in the control and direction of strike aircraft and to advise the ground commander in the planning and execution of TAC air support is mandatory and has proven exceptionally effective. *It would be even more effective at company level.*

2. On occasion it may be necessary to stop everything to carefully adjust artillery and TAC air to place it exactly where it is needed. The fire often must be "walked" to the desired location.

3. Air Force F-43 helicopters can be used effectively, *Results from previous use of orientation - successful navigation.* but slowly, to evacuate personnel from jungle areas where no LZ is available. A cable hoist for the UH-1 helicopter is urgently needed. *FAC*

4. During any extraction, it is imperative to know how many troops remain in the objective area and where they are located. During the conduct of an extraction at night, this becomes even more important to preclude leaving personnel in the pick-up area and to insure that supporting artillery and air can be brought in close to the perimeter."

5. The difficult problem for the battalion commander after contact is to determine where all his forces are located before committing any more forces to movement or using his heavy fire support. The element in contact must also be given time to develop the situation before the decision is made to maneuver other elements or use the heavy fire support.

Lesson Learned

Whenever the situation cannot be developed without excessive personnel losses, the most effective approach is to break contact, strike the enemy with air and artillery, with an immediate follow-up by friendly maneuvering.

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F. Operational Critique, 173d Airborne Brigade, 1 - 5  
January 1966.

Incident/Observation(s)

1. The crossloading of advance parties of the last two battalions and the artillery battery into the first battalion's lift enabled the orderly arrival of subsequent airlifted elements to their designated positions.

2. UH-47 helicopters were employed to lift 4.2 mortars and mechanical mole prime movers into the objective area. The terrain in the objective area was impossible to traverse with these loads, therefore, the mortars remained within a few meters of where they were landed for the entire operation. Aerial reconnaissance did not reveal this terrain condition.

Lesson Learned

The introduction of heavy equipment into the LZ should be held in abeyance until an on-the-spot reconnaissance has been made.

3. The artillery was lifted by CH-47 by sling load from Bien Hoa to Bao Trai on F-Day.

Lesson Learned

The advantages of sling load rather than internal carry are that the gun crew and ammunition can be carried internally in the same aircraft, and unloading is faster in the objective area thus subjecting the aircraft to minimum exposure.

4. For the extraction of a force by air, UH-1 helicopters should be used to rapidly lift the force from the hostile area to a secure area. Chinook helicopters may be used to move the forces from the secure area for the longer haul to the base camp.

Lesson Learned

The Chinook helicopters appear to subject an inappropriately large number of personnel to hostile fire while in the congested area.

5. It was proposed that we attempt to modify our tactical air ordnance delivery procedures in order to halve the time of LZ preparation and double the amount of ordnance. The time allocated to TAC air preparation is normally thirty minutes. Each flight of three aircraft takes approximately seven and one half minutes to expend. When 10 minutes of artillery preparation and 5 minutes of armed helicopter are added, it amounts to a 45 minute warning to the enemy. We may either move forces into

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the area, or out of the area prior to the landing of the first troop lift. Experiments will be made in future operations to expend ordnance from aircraft flying two or three abreast carrying one type of ordnance instead of the fixed load now carried.

6. Hopscotch Tactics:

a. "A new tactic was practiced with 1/503 Inf, west of the Oriental River, which is designated hopscotch. The purpose of this tactic is to search out the enemy over a large area, using a minimum expenditure of forces and dominating the area in a short time, through air mobility, violent assault, and surprise.

b. "The procedure was as follows: Three assault elements were organized out of two rifle companies. One force consisted of 144 men while the other two had 72 each. With minimum amount of planning time and the maximum amount of prearranged supporting action each force was able to make assaults by helicopter in separate areas. As each force landed, the helicopters picked up the next force and were able to either reinforce the previously employed element or take an assault in another preselected area."

*modification of movement by brigade. P-15*

c. "The sequence of events was as follows. The first element became airborne and flew to a rendezvous point approximately five minutes flying time from the selected LZ. When over this point, the flight leader announced "Skyhook". This started the five minute countdown. The artillery FPC monitoring the flight leader acknowledged the receipt of "Skyhook," which was the signal for the artillery to begin the LZ preparation in volleys for one minute. At the end of the three minute countdown, completion of the artillery firing was indicated by the firing of red smoke in the last volley. Armed helicopters preceded the troop lift by one minute firing on the flanks of the LZ. At the end of 5 minutes the forces were on the ground and troop helicopters departed the area to pick up the next element. By the time the next element was airborne, the airborne command post was able to determine from the committed force whether the enemy situation demanded that the next lift be employed as a reinforcing unit or could be committed in a new location. It was decided that the next lift could be employed in a new location hence the entire sequence of timing was started anew. All three lifts were employed in separate areas. Contact was made in one area, but it soon ceased and reinforcement was not required."

d. "The forces remained employed for a period of three hours and were then extracted."

e. "Tactical air was maintained overhead throughout the entire operation."

Lesson Learned

"These tactics enabled a force of less than 300 men to search and dominate, in approximately four hours, a suspected enemy

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area which would normally have taken a battalion size unit several days. These tactics appear to have much merit in open terrain which affords numerous landing zones; they truly exploit the mobility of the helicopter."

*How many VC were killed? etc.*

G. Operational Critique, 173d Airborne Brigade, 6-14 January 1966.

Incident/Observation(s)

1. "It should be noted that the landings in each of the three battalion areas were completed more rapidly than during former operations. Each lift of 3 elements, consisting of 10 helicopters each, touched down and departed within a total of no more than three minutes."

Lesson Learned

This was made possible by the fact that the elements land in a staggered trail which permits quicker 'settling' and quick exiting of the troops.

2. UH helicopters should be used to extract forces from an unsecured area to the nearest secured area in order to achieve a quick turn-around. CH-47 helicopters can then pick up the forces from the secured area for the long haul.

3. "It is suggested that when a ground follow-up to a B-52 strike is made, the time of ordnance delivery be greatly compressed. The present time span of delivery and the long, cruise burns flights enables the enemy to move out of the area or get into deep holes after the initial drop. When a ground force follows a B-52 strike, the mass delivery of CDU's with an immediate follow-up airmobile assault in the proximity of the strike would appear to achieve the optimum surprise and highest probability of success."

H. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

Reconnaissance immediately prior to an airmobile operation should be fitted into the general pattern. Aggressive use should be made of Rangers, Special Forces, reconnaissance companies, pathfinder teams, etc., equipped with superior communications. These units must be used rapidly to probe potential enemy positions and to join definite intelligence with minimum exposure of our own resources. Better and continuous use of aerial photographs should be made."

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Section III (continued)

I. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

Experience indicates that troop landings for search and destroy operations should begin, when feasible, on high ground and extend toward blocking forces located at the base of hills. The down movement conserves the strength of personnel and at the same time allows for complete coverage of the terrain. Moreover, this procedure attacks prepared enemy defensive positions in their rear when they are primarily sited to defend against attacks coming up the hill.

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(Section III continued)

J. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

The best solution for control of aircraft and artillery is for all units in the landing zone and all aircraft entering or leaving the zone to operate on a common air-ground frequency, controlled by a pathfinder team. Mutual clearance of artillery and aircraft is obtained, and resupply aircraft are directed to their proper holding area. In addition, pilots are gaining confidence in being able to fly under and adjacent to the artillery projectile. During one operation, C Battery fired continuously for almost three hours and maintained continuous fire for one and one-half hours. In addition, the other battery in the area fired during this period. HU-1 and OH-13 helicopters were able to enter and leave the landing zone by careful air control procedures.

Lesson Learned

Utilizing pathfinders with units concerned monitoring the air-ground frequency, optimum artillery fire can be effected without endangering aircraft.

K. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

The use of multiple dummy landing zones to the flanks and rear of enemy positions, with helicopters approaching or even touching down on several but discharging troops only on one landing zone, is frequently effective in deceiving the VC as to the intent and actual location of our assaulting forces. The VC will sometimes abandon prepared positions when faced with this tactic, and then become vulnerable to preplanned artillery and air strikes directed at them, and on their escape routes. The use of this same tactic is also useful in the infiltration of long range patrols and helps insure clandestine entry into the patrol areas.

Deceptive tactics with helicopters enhance the security of airmobile operations, increase chances of success and help gain surprise.

L. MACV, dated 15 March 1965.

Incident/Observation(s)

Operational experience over the past three years in the RVN indicates that the best general concept of employment of armed helicopters in support of airmobile operations calls for two fire teams to provide

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suppressive fire in and adjacent to the LZ. Each fire team should consist of at least two and no more than three armed helicopters. The best ratio of armed helicopters to lift helicopters varies with the mission and the size of the lift formation, but the number of fire teams on station at a given time remains relatively constant at 2 per LZ regardless of the size of the lift formation. Best control of the mix depends upon the location of the units, the type and size of airmobile operation being conducted and whether US or ARVN forces are being supported.

In addition to the above:

a. Airmobile operations should employ a minimum of two light fire teams on station (LZ) with one additional armed helicopter used as a command and control helicopter and to provide additional fire support for either of the fire teams. To provide this support there must be five mission-ready helicopters available at all times.

b. The 5 armed helicopters can adequately support up to 20 lift helicopters which are operating in a close formation into 1 LZ. This provides a mix of armed and lift helicopters of 1:4 which experience has shown to be the best mix for large airmobile operations. The mix of 1:4 considers only the fire support required in and around the LZ during troop lift operations.

c. The mix of armed and lift helicopters should be provided at company level for the separate battalion through assignment or attachment of one armed platoon of sufficient size to provide five mission-ready armed helicopters/crews to the lift company. One additional armed platoon should be assigned to the battalion and be under direct control of the battalion commander.

d. The mix of armed and lift helicopters should be controlled at battalion level for divisional battalions where the companies are closely located in the same general area. This battalion should have an armed company of sufficient size to provide the mix of 1:4 for troop lift while retaining one platoon as a reserve force for commitment as specific tactical situations may dictate.

Section III (continued)

M. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Units unable to extract serious battle and non-battle casualties due to the non availability of LZs.

Lesson Learned

Winch extraction of battle or non-battle casualties, as well as prisoners from otherwise inaccessible terrain is feasible. A corollary advantage is the morale effect for the troops to know that such an extraction means is available.

When operating in areas where LZs are not available, an H-43 rescue helicopter should be attached or available in direct support.

2. Incident/Observation(s)

Air and artillery preparation of helicopter LZs indicated to the enemy our intention of utilizing a particular LZ. The preparation affords him time to evacuate the area or conversely to establish an ambush on the periphery of the prepped area.

Lesson Learned

Battalion night helicopter assaults into a secured LZ are feasible and desirable. Without the conventional preparation to alert VC forces in the area, the VC cannot react quickly enough to impede the helicopter assault.

N. 173d Airborne Brigade (Operation SILVER CITY), dated 15 April 1966.

Incident/Observation(s)

The extraction from an area of operations should be done with the least amount of change to the established daily routine as possible to prevent the VC from becoming aware of the operation and using it to his advantage.

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Section IV. Enemy Tactics.

A. Inclosure 1 to Letter, AVCGT-T, subject: Lessons Learned, 1 October - 30 November 1965.

Lessons Learned

1. The Viet Cong tends to operate primarily near villages and roads. Harboring sites in remote areas are normally close to fresh water.

2. PAVN mortar firing is generally used only in front of their route of attack and frequently in a creeping pattern. This tends to pinpoint their route of attack.

D. Combat Operations After Action Report (MACV/RCS/J3/J2), dated 30 December 1965.

Incident/Observation

An analysis of actions around various Special Forces Camps indicates that the VC uses the tactic of harassing a camp with minimum forces in order to mount an attack against any friendly relief forces.

*Lin Pao's "sparrow warfare". use of teams of 3 to 5 men to harass by sniping.*

Lessons Learned

That other Special Forces Camps in Vietnam be thoroughly evaluated concerning the possibility of VC attack for the specific purpose of ambushing a relief column. Those in position where access routes are limited and only a ground force could render adequate relief - - should be moved.

C. Commander's Combat Note Number 90, dated 18 January 1966.

Incident/Observation

The Viet Cong are reluctant to break contact with US Forces during daylight even though they have sustained heavy losses. They tend to keep as close as possible to the US troops, knowing that they will receive less fire from mortars, artillery and the air.

E. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. A favorite tactic of the PAVN enemy we faced seemed to be an aggressive small-unit encircling maneuver. Another was a rapid assault by 6-10 PAVN on 2 or 3 friendly.

2. When wounded, he continued fighting with his small arms and grenades. He appeared fanatical when wounded and had to be approached with extreme care. Many friendly were shot by wounded PAVN.

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3. When attacking, the PAVN units confronting us used mass assault tactics preceded in some cases by light mortar and anti-tank rocket fire. The latter, I believe, is often mistaken for mortar fire. They also used encircling maneuvers with 50-75 man groups. He was expert at probing our defensive perimeter at night and went to great efforts to try to force friendly units into firing.

4. We must make imaginative and constant use of our tremendous fire support advantage to kill the PAVN enemy before he gets so close that we must fight him on his terms. This includes heavy use of the 1-79 and even hand grenades to hold him out so that artillery, TAC Air and Army Rocket Artillery can work on him.

E. Letter, MACJ343, MACV, subject, "Lessons Learned, No. 54: The Battle of Ky Phu (U)," dated 27 January 1966.

Incident/Observation

Essentially this action was a movement to contact culminated by a VC ambush designed to destroy the entire Marine march column.

During this action, three separate engagements occurred: The initial attack on the advance guard; the attempt to encircle and destroy h/S Co; and the attack on the rear guard. All these attacks were effectively foiled by aggressive leadership, rapid and effective response to orders, fire power, and use of supporting arms, resulting in severe losses being inflicted on the attacking VC forces.

Lessons Learned

"Of particular note as a result of this action are two techniques employed by the VC to increase the effectiveness of their ambush.

1. "VC units attacked the center of the column from positions previously traversed by the flank security elements of the advance guard, moving into these positions during the time and space interval between the flankers of the advance and rear guards (estimated as 30-45 minutes). Flank security for main body elements was limited to areas in close proximity to the route of march.

2. "Initial enemy fire was directed against commanders and radio operators, resulting in the loss of one company commander and nine radio operators (three killed and six wounded), and destruction of three radios."

F. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "The VC unit conducting the night attack will often break off the attack and stop firing. If the friendly units stop firing

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at that time also, the VC uses the lull in the battle to his advantage to slip out to the friendly lines to recover dead, wounded and weapons. Therefore, continued small arms, automatic weapons and supporting harassing fires should saturate the battlefield and along likely routes of withdrawal to obtain the maximum amount of enemy casualties as he attempts to police the battlefield.

Lesson Learned

That units must continue the pursuit by fire after the enemy has broken off the attack at night.

2. On the few occasions that AT type mines have been discovered, we have yet to encounter a mixed field. When AT mines are employed, they are placed exclusively on roads and trails capable of carrying vehicular type traffic. AP type mines are employed, however, on the defensible terrain nearby, so that infantrymen taking to the high ground to protect a disabled vehicle are then subjected to the AP mines and booby trap devices.

Lesson Learned

Stress the requirement for constant vigilance against AP mines and booby traps on nearby trails and defensible terrain whenever AT mines are encountered.

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Section IV (continued)

G. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

A marked difference between PAVN and VC fighting was observed during recent operations in the Chu Pong and Ia Drang areas. The PAVN units are better equipped and trained and fought tenaciously in the face of overwhelming US firepower. In contrast with local VC units, the PAVN pressed the attack, becoming decisively engaged and disengaged only after taking severe losses. PAVN units attempt to employ "close embrace" tactics to prevent our use of supporting fires. An attacking unit must be careful to keep PAVN units at arms length because once a unit is involved in "close embrace," attempts to draw back to place supporting fires on the enemy are frequently met by the enemy's following immediately as the friendly forces draw back.

H. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. The Viet Cong employ several types of markers for the purposes of providing directions for Viet Cong units to follow, or to mark routes for an attack. Also employed are markers to aid firing into a pre-determined area or installation. By aligning a weapon with the preposition marker, it is possible to fire fairly accurately in the dark. When such markers have been removed, Viet Cong firing incidents have ceased or decreased.

*Why not ambush the marker locations? FVB or working the area - Daymons.*  
Lesson Learned

a. Maintain a loose-leaf type manual with photos and sketches kept up to date on new Viet Cong techniques.

b. Units conduct frequent patrols around the outside of perimeters to remove and destroy markers, recording the location, direction and estimated range to each possible target and indicating the nature of each target.

2. Several instances have been reported when Marines in close pursuit of Viet Cong have been distracted by the enemy dropping his pack on the trail. Most Marines, it has been learned, will stop to inspect the contents of the pack before pursuing the Viet Cong further. In the meantime, the Viet Cong has made his escape with the time gained, while the Marine is inspecting the discarded Viet Cong pack.

3. The VC have used the tactic of following a force of Marines back to a landing zone. After the majority of Marines have been lifted out, the VC either attack the remaining Marines or fire on the helicopters as they return for the last lift.

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I. 173d Airborne Brigade - MAFAULER I, dated 24 February 1966.

1. Several new VC tactics were encountered during this operation:

a. VC forces in the area used a small ground to air missile on at least two occasions.

b. When forced to leave his positions, the VC attempted to burn his installations, supplies and documents which could not be carried.

c. The reluctance of the Viet Cong to break contact with brigade forces during daylight hours, even though he sustained heavy losses from the brigade's superior firepower. It appears that he knows that losses would be devastating if an attempt to withdraw was made during daylight.

d. Intelligence information indicated the VC Main Force units operating in the AO were forced to break up into numerous small elements in an effort to avoid detection by brigade elements.

J. United States Army Vietnam, dated 24 November 1965.

Incident/Observation(s)

1. The most common type of mines and booby traps thus far encountered is that utilizing a Chi Com hand grenade. These grenades have been used effectively and ingeniously in every area. The following are the more common means of employment...

a. In VC controlled or well-infiltrated areas, these grenades are buried in well-travelled areas and detonated electrically. Thus, they can be controlled so that local people can walk back and forth over the booby trap. When enemy troops are in proper position and local people safely distant, VC or VC sympathizers detonate the booby trap. Long lead wires allow the person detonating the device to be well clear of the area at the time of detonation or immediately thereafter. The grenades are sometimes buried in groups, producing the same effect as anti-personnel mines.

b. Most often VC traps employ a pull type friction fuze consisting of a crooked wire imbedded in phosphorus. The fuze is connected to monofilament line or camouflaged nylon thread or even vines, which are used for trip wires. The friction produced by the wire ignites the phosphorus, detonating the grenade.

c. Booby traps have most often been found at grave yards, gates, in booby trapped panji pits around helicopter landing zones, and on paths leading to and from unsecured hamlets.

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d. In addition to explosive devices, many non-explosive devices are employed, the most effective being panji pits. The most common panji pit is about four feet square and about four feet deep. Panji stakes (sharpened bamboo) about six to eighteen inches long are placed upright in the pit. There are about six or eight stakes in the average pit.

*probe footing with walking staff of bamboo*

2. There are indications that the VC have a special way of marking the panji traps so that other VC, and sympathizers, can stay out of them. There are two ways that Marines have observed. In the first case the pits are marked by placing a bamboo bonnet, much like the bonnet of a minefield marker kit, over the pit. The bonnet is made of split bamboo and tied in the proper shape.

Another method is to use a large palm leaf, split the leaf, then place the split leaf on the deck with the end touching the panji pit. These markings have only been observed on the small, foot-size holes. The method for marking larger holes is undetermined.

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Section IV (continued)

K. After Action Report, 2d Battalion, 27th Infantry, 25th Division, dated 8 February 1966.

Incident/Observation(s)

1. VC use large tunnel systems as a mode of travel, hospitals and/or storage areas. Unless this tunnel complex is located and destroyed as a unit moves forward, the VC is capable of employing forces at any time in multiple locations to the flanks and rear of friendly elements with relative ease. Thorough search of these tunnels prior to destruction is the only assurance for locating and destroying all exit/entrances.
2. Experience has proven that valuable documents and other miscellaneous papers are often stored in the tunnels.
3. VC dead and wounded are evacuated quickly and mysteriously from the battlefield via these tunnel systems. Graves within tunnels are common.
4. The tunnels are seldom booby trapped.
5. Experience indicates a strong possibility that tunnel networks are being used to move small vehicles from place to place under ground.
6. Firing pits and bunkers close by tunnel networks are mutually supporting and are generally arranged in a triangular system. Firing apertures are extremely small and almost impossible to detect.
7. Long tunnel entrances/exits are normally in densely wooded areas while short ones are close by to hamlets, roads and trails.
8. Graves in tunnels are usually cut into the tunnel wall and sealed with a makeshift bamboo door and packed mud.

L. Operation PADDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

The VC appear to be using high airbursts to register their mortars and are capable of placing well-aimed indirect fire anywhere in sector without apparent pre-registration.

FIRE DATA PROBABLY COMPUTED AND  
RECORDED FOR AS MANY BATTERY SITES  
AS POSSIBLE WITHIN EACH VC AREA  
OF OPERATIONS. SITES PROBABLY MARKED & CODED.

IV, FWS

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4. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

The principle of defense through offensive operations proved highly successful.

Lesson Learned

In the course of a brigade operation, the frequent use of company and battalion size actions, in addition to saturation patrolling by platoon and squad size elements, effectively dominates large areas and denies the enemy any opportunity to operate therein without being detected and destroyed. Changes in defensive positions, a diversity of offensive operations and prompt, aggressive reaction with "Hawk Flights" can keep the enemy off balance to such an extent that no coordinated attacks are possible.

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Section IV (continued)

N. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Local Viet Cong units do not move completely out of the area of operations, but rather move ahead of and behind our units, keeping them under constant surveillance. As a result, stay-behind patrols, ambushes and the unexpected return to areas covered one to two days earlier proved quite effective in surprising the enemy.

Viet Cong, particularly local platoons and companies, generally remain in areas where water is readily available and use existing trail systems. They utilize high ground and dense foliage only when closely pursued.

2. Incident/Observation(s)

VC forces, when found, will usually defend the mountainous valleys. They carefully select positions which include the slopes, natural caves, overhangs, etc. and present a formidable defense. Several units have sustained casualties while engaging a VC force, so entrenched, with enemy casualties usually unknown. The rocks and caves limit the effect of supporting fires, air and artillery and also organic fires.

*Mountain Pass*

This battalion had considerable success when it traversed exceedingly difficult terrain and moved from the end of the valley, toward its mouth, keeping flank security on the slopes of the valley. This direction of advance caught the VC completely by surprise, caught several in the open and confused and blocked their line of retreat. As a result, in one engagement we killed 12 VC while they inflicted no friendly casualties. On another occasion we killed 2 of 4 unsuspecting VC, again with no friendly casualties.

Lesson Learned

VC forces tend to be careless in areas they consider safe. Approaching from an unexpected direction reaps dividends.

3. Incident/Observation(s)

Movement along stream beds is not advisable at dusk. This is the time when the enemy moves to these areas to prepare rations and to replenish his water supply for the following day. On the other hand, this fact can be used to advantage for observation of the enemy by patrols or for strikes by air and artillery.

Observations indicate that small armed enemy groups enter the villages at dusk and move out at dawn. These are most probably local ambush parties and trail watchers who stay in the villages during

the hours of darkness. Knowledge of this fact could be used advantageously to attack such villages at night while the fighting men are assembled.

O. 173d Airborne Brigade (1 October 1965-31 December 1965).  
 dated 14 March 1966.

1. Incident/Observation(s)

A new VC tactic of employing mines thirty to forty feet to the sides of roads was encountered by this brigade. It is felt that this is a VC counter measure against ground troops who normally move along the sides of the road or to its flanks.

*During the night of 10-11 December 1965, the VC forces were observed to move along the sides of the road.*

2. Incident/Observation(s)

Another new VC tactic observed during Operation Smash (17-22 December 1965). After contact was made with a VC battalion in well-prepared positions, US forces were pulled back to allow friendly air and artillery fires to be placed on the forward VC positions. VC forces, utilizing a "thumping" tactic, left their positions and followed the US forces to reduce effectiveness of friendly supporting fires.

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Section V. Basic Tactics - Friendly Forces.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGFC-28 (KL), dated 16 October 1965.

Incident/Observation(s)

1. "This is a company commanders' and platoon leaders' war. Even brigade-sized operations ultimately break down to semi-independent company and platoon-sized actions. Platoon leaders are required to act far more independently than in a 'conventional' war."

2. "APCs can be used to break trail in dense jungle areas. Troops move in single file behind trail-breaking APC. Infantry on foot provide flank security between APCs. APCs can also be used to break a clearing quickly to permit med evac by helicopter."

3. Armored vests are useful for static defensive operations, riding in helicopters and vehicles, but are too hot and too heavy to be worn on offensive foot mobile operations.

B. Inclosure 1 to Letter, AVCGT-T, Subject: Lessons Learned, 1 October - 30 November 1965.

Lessons Learned

1. Buddy Teams. Many casualties have been caused by punji stakes, snipers and booby traps. If men operate in two-man "Buddy Teams," casualties are reduced. One man watches for punji stakes and booby traps while his buddy searches the trees and the area to the front for snipers.

2. Counter Sniper Actions. One unit achieved considerable success in combating snipers in trees by systematically spraying all trees to their front with automatic fire on a given signal at first light. The process must be deliberate and controlled. Squads and platoons must be given a sector of the perimeter. Random fire must never be allowed *except at specific targets.*

3. Stay Behind Forces. On several occasions when a US unit left an area, the VC returned to reoccupy the area or search for discarded American equipment. There have been occasions where well-camouflaged US stay behind units have been successful in ambushing returning VC forces. When a stay behind force cannot be used, aerial surveillance and H and I fires have caused casualties to the VC when they reentered the area.

4. Standard Procedures. Operations conducted to date have demonstrated the importance of standard SOPs, SOIs and training with standard procedures: any battalion can work under any brigade, and a company can work when attached to any battalion. This has proved to be

SOPs HUA

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( particularly valuable in air assault operations since every unit not engaged is, in effect, a possible reserve for every other unit.

C. AVCCG Counter Ambush Techniques, Headquarters 1st Air Cav Division, dated 1 December 1965.

Extract from the Orders of a Senior Commander.

1. Motor Movements.

a. Requirements for individual vehicles carrying personnel include:

(1) Floors of 1/4 ton vehicles will be sandbagged or given equivalent protection to reduce casualties from VC use of mines.

(2) Vehicle commanders are responsible for designating passengers as sentinels to provide observation in all directions.

(3) Canvas and bows will be removed from all vehicles transporting troops.

(4) Troops will be seated or positioned and equipment loaded so that all personnel can return fire immediately if ambushed. Individual weapons will have magazines inserted; a round chambered and SAFETY ON. M60 machine guns employed hand held in the cargo compartment of 3/4 ton and larger trucks will be loaded with SAFETY ON. M60 MGs on pedestal mounts will be loaded and set on "FIRE." Caliber 50 MGs on pedestal or truck ring mounts will be full LOADED.

(5) The following procedures are recommended for 2 1/2 ton and larger cargo vehicles transporting troops:

(a) The vehicle commander should be positioned in the cargo compartment.

(b) The truck bed should be sandbagged, and if possible, the sides should be protected by modular armor plates.

(c) Expedient seats arranged to place troops in the center of the vehicle facing outward is desirable. When this cannot be accomplished, troops seated along the side seats should face "half left" or "half right" with weapons in a vertical position resting on the seat.

(6) Action of vehicles when subjected to ambush fire:

(a) Vehicles in the immediate killing zone should attempt to drive through with all personnel returning fire. If

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the road is blocked, vehicles will pull off to alternate sides of the road, and troops will fire from the cargo compartment until other personnel have detrucked, and then these personnel will detruck and join in the assault. If ambush fire is received from one side of the road only, troops on the side facing the ambush will remain in position and fire until personnel on the opposite side have detrucked and begun to assault.

(b) Vehicles not in the killing zone will halt by pulling to alternate sides of the road, and troops will detruck and attack toward the ambush site. Commanders located in portions of the convoy not under attack will use radio communication to obtain artillery or aerial fire support and report the ambush to the appropriate higher headquarters of the unit responsible for security of the sector in which the ambush occurred.

2. Airmobile Operations.

Commanders of ground and aviation units must remember that airmobile assault forces are as vulnerable to ambush as forces moving by foot or motor convoys. Habitual use of the same staging areas, flight routes, and landing zones establishes a pattern that enables the VC to choose the time and place of ambush. Aviation unit commanders must learn to recognize potential ambush sites - e.g., the only open field in a large area of otherwise dense jungle; the approach into an LZ that lies between close ridge lines; the LZ in close proximity to a force that is engaging the enemy. These are but a few examples of potential ambush sites for airmobile forces. Application of the following proven air assault techniques will greatly reduce the possibility of major losses due to VC ambush of airmobile forces:

a. Aggressive aerial surveillance and use of ground security elements during staging operations.

b. Variation of flight routes and altitudes and provision of armed escort aircraft enroute.

c. Use of air cavalry and pathfinders plus the use or ready availability of the USAF Tac Air - airmobile artillery - armed helicopter team in support of airmobile assaults.

*d. Plan by fire prior to landing??*

E. Commander's Combat Note Number 9C, dated 15 January 1966.

Incident/Observations

1. The helicopter as a troop lift vehicle enables a relatively small number of Infantry units to cover an extensive area. However, once the soldier lands on the ground, he moves only as fast as the ground and his physical condition allow him to move.

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2. There is NO substitute for the personal grit and determination of the man who is immediately face to face with the enemy.

E. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

1. "Careful placement of M-79 men should be emphasized in order to give them the best possible fields of fire. They must always be on the lookout for enemy in trees. It was found that the M-79s were extremely effective against enemy in trees as well as troops in the open. M-79s must be fired into trees and the high grass even when no enemy are seen.

2. "In a perimeter defense, it is necessary to check the front with small recon parties at first light and periodically through the day for 100-200 meters to clear out infiltrators, police the battle-field and to insure that the enemy is not massing for an attack."

F. DF, AVID-OM, MACV, dated 17 February 1966, subject, "Employment of E-158 Chemical Munitions Report from 1st Infantry Division."

Incident/Observation

1. Mission employing E-158 Chemical Munitions was result of request by ARVN to take an area under fire because of suspected VC concentration in a rubber plantation. Aircraft were unable to identify a target, so E-158s caused enemy to move, creating a target for aircraft and artillery. The E-158 chemical munitions were dropped from UH-1D helicopter from an altitude of 1500 feet, flying speed of 80 knots. Temperature gradient - strong lapse. Wind speed at time of drop was approximately 25 knots per hour from west to east. Vegetation in the area was jungle and rubber trees.

2. Results of employing E-158:

a. Immediately after the munitions were on target, movement was observed in the target area.

b. The use of E-158 enabled aircraft to take the enemy under fire.

G. 1st U. S. Infantry Division, dated November 1965.

Incident/Observation(s)

A battalion-sized task force occupied a battalion perimeter just south of a village and was attacked by a series of 5 Viet Cong attacks. The battalion utilized tactical wire to enhance the perimeter.

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Lessons Learned

1. When possible, a unit which goes on an overnight operation should take tactical wire to help secure the temporary defensive perimeter. Tactical wire proved valuable at BAU BANG.
2. Rarely ever occupy the same perimeter on successive nights. Security is enhanced by selecting a new area and occupying it just prior to darkness, allowing sufficient daylight hours for adequate preparation. *Base for any overnight halt still*
3. Registration and planning of mortar and artillery concentrations must be completed early. This action, accomplished on the eve of BAU BANG, proved significant in the reduction of reaction time required to bring fires on the enemy.
4. When the convoy force attacks away from the road, some force must be left to hold the road.

E. 173rd Airborne Brigade, date: 5-9 November 1965.

1. Incident/Observation(s)

It is an advantage to set up a battalion base and operate from that base rather than constantly move the battalion as a whole.

Lesson Learned

This battalion base procedure expedites logistical support and command and control. Heavier weapons, such as 4.2 inch mortars, can also be delivered into the base if needed. This technique has been found to be an excellent way to search an area.

2. Incident/Observation(s)

In dense jungle terrain most enemy contacts are made at distances of 15 to 30 meters. Once contact is made with an enemy with automatic weapons, the contact force is relatively glued to its position, and it becomes difficult to pull them back to allow heavy fire support to be used close-in. *short ranges*

Lesson Learned

In the future, when conducting approach marches, approximately five fire teams of five men each precede the main body by 100 to 200 meters. In this manner the minimum of forces will be committed when contact is made, enabling the maximum freedom for maneuver of the main body.

*depth to effect*  
*lack of other action*  
*sch advance party*  
*E 5*

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I. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

In Ident/Observation(s)

On several occasions the 1/RAAR returned to an area which they previously searched and discovered that the enemy had returned. This procedure of returning to an area resulted in several enemy KIA.

J. Operational Critique, 173d Airborne Brigade, 8 - 14  
January 1966.

Lesson Learned

The use of the 20# smoke pot was found to function extremely well to asphyxiate anyone in an enclosure.

K. Letter, JRATA, subject, "Tunnel Contamination, Chemical Agent," dated 3 February 1966.

Incident/Observation

The purpose of the above letter is to report a field expedient method of disseminating agent CS for tunnel denial contamination.

The CG, 173d Airborne Brigade, and the CO, Australian Army Forces, Vietnam, have developed two methods of tunnel denial contamination which, although differing slightly in methods, appear to be an effective approach to the problem.

Lessons Learned

1. "The 173d Airborne Brigade has prepared contaminating charges by wrapping 3 pound plastic sacks of micro-pulverized bulk CS with detonating cord. Single or in parallel, these containers are detonated within the tunnel and spread the agent throughout the immediate area. Field reports indicate that the tunnel walls are contaminated to a depth of six to eight inches and that an effective denial concentration of long duration is expected."

2. "The Australian Army forces prepare their contaminating charges in a different manner. They prepare cans of micro-pulverized bulk CS agent, each with a small detonating charge (1/4 pound TNT and electric blasting caps). After opening a tunnel entrance, these containers are placed in the tunnels approximately twenty to thirty meters from the entrance. A forty pound demolition charge is then placed at the entrance and is wired in parallel with the contaminating charge. On detonation, the cans of agent are ruptured by small attached detonating charge, and the blast wave from the heavy charge is believed to carry the cloud of agent a considerable distance down the tunnel."

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3. "CS has been incorporated into Division Base Defense Plan as an initial response to an attempted penetration."

4. "CS authority has been requested for all division operations (1st Cav Div). CS from homemade dispenser has been used 5 times. Lessons learned from these operations are:"

a. "Must use CS close enough to assaulting troops that they can exploit the CS in about 20 minutes."

b. "CS placed in very densely foiled areas is an effective blocking agent for short periods." *also weather - wind important. FRS*

c. "Must have close coordination at point of release to make last minute adjustments in location of strike due to winds."

d. "Attacking troops must take care of masks (particularly keep them out of water)."

e. "Type targets attacked - enemy in trenches and spider holes; suspected automatic or crew served weapons locations."

f. "Aerial Rocket Artillery or Air Force TAC Air on standby is an excellent method of exploitation."

K. Letter, AVC-SO, United States Army Vietnam, subject, "Employment of E-158 CS Clusters," dated 22 January 1966.

Incident/Observation

"The 173d Airborne Brigade (Sep) employed riot control munitions as a part of Operation KAPAUER. The drop aircraft (UH-1B) was accompanied by a light fire team and artillery air observer. Concept of employment on suspected position was to seed an area with CS, flush the enemy and engage any enemy with artillery fire and armed choppers."

Lessons Learned

1. "When dropping the E-158 CS clusters from a helicopter, the best altitude of drop appeared to be 1500 feet for accuracy ground cover and reasonable safety from enemy ground fire. When a pilot was experienced in dropping other munitions, accuracy was excellent. On the one occasion in which the pilot was not experienced, one cluster was dropped very near a friendly unit. Experience indicates a need for pilot training with munitions."

2. "The E-158 cluster should be employed in sufficient quantities to thoroughly cover the target area quickly."

3. "Friendly troops must be near enough to the target area to exploit the use of CS munitions."

*Class in assault in 15-20 min.*

*4a, page - FRS*

*7*

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4. "Greater use should be made of TAC aircraft since greater numbers of munitions per sortie could be employed. More rapid delivery would reduce vulnerability to ground fire."

L. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

1. "In order to 'fight' and defeat any enemy you must first 'find' and 'fix' him. To do this with the VC is one of the most difficult problems facing the U. S. Army in Vietnam."

Lessons Learned

a. Make and demand complete reports --- Who, What, When, Where, How, Why and action taken.

b. Train, organize and employ small, long range and stay-behind patrols.

c. Use Vietnamese interpreters and check the interpreter by using an American who understands the Vietnamese language.

d. Sanitize uniforms and wallets prior to operations.

e. Use cameras in the field for gathering intelligence information.

f. Do not conduct excessive reconnaissance of planned operational areas. You may alert the enemy.

2. "Experience in Vietnam is replete with repeated incidents wherein the capability to produce immediate photographic evidence would have provided vital intelligence data with respect to Viet Cong encampments, supplies, equipment, booby traps, etc., as well as invaluable visual aids for the correction of maps and historical records."

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Section V (continued)

M. MACV, 7th Infantry Division (AEVII) Advisory Detachment,  
dated 16 February 1966.

Incident/Observation(s)

On 7 February 1966, a Vietnamese Infantry battalion, while conducting a motor march to a training center in Cai Be District, Dinh Tuong Province, was ambushed and decimated.

The Senior US Advisor to the Vietnamese 7th Division attributed the Viet Cong's success primarily to the poor prior planning and coordination accomplished in preparation for this move. In view of this he proposed to his Vietnamese counterpart the following checklist for future convoy planning:

1. Intelligence.

- a. What will weather conditions be?
- b. Have areas of special danger been determined?  
*Plan to handle them*
- c. Have latest intelligence reports been screened  
to determine any VC movement or intentions to set an ambush in the  
vicinity of route of march?

2. Designation of Convoy Escort.

- a. Who will be the Convoy Commander?
- b. What troops will act as convoy escort?
- c. Will APC's be used as escort? If so:
  - (1) What size unit?
  - (2) Will unit's present mission interfere with  
their movement?
  - (3) What is movement time from unit's location  
to convoy pickup point?
- d. Will armor cars be used as escort? If so:
  - (1) How many cars will be needed?
  - (2) What is movement time from cars' location  
to convoy pickup?
- e. Has aircraft cover been requested?

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or VNAF)

(1) What aircraft will cover convoy? (US

(2) What FAC aircraft will cover convoy?

(3) Has VII observer been designated and briefed?

(4) Has time for aircraft to be on station/ location been designated?

f. Has artillery support been provided for? *None*

(1) Have platoons along designated route been placed on alert?

(2) Have platoons been instructed on what segments of the highway they are responsible to cover?

(3) Have platoons been instructed on what the direction of movement of the convoy is?

(4) Do platoons have radio communication capability with flying observer and with the convoy commander?

(5) *Checkpoints coordinated to meet for delivery?*

3. Road Security and Reaction Forces.

a. Has road clearance/security been provided for?

(1) Has each sector and subsector along route of march been notified?

(2) Has National Police been notified to set up TCP? (Where and when they will be in operation)

(3) Has provision been made to insure road clearing operations have been completed prior to releasing convoy?

(4) Have all units along route of march been notified of the time that convoy will be in their area?

(5) Has provision been made to have military police available to assist convoy across Vinh Long Ferry?

b. Have specific units been designated as a reaction force?

(1) Have specific areas of responsibility been designated for the reaction forces?



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(2) Do reaction forces have radio communication with the convoy commander while it is in their areas?

(3) Has each unit been notified as to what time they are to be on full alert?

(4) Does unit have necessary transportation available?

(5) Have the reaction units been informed of the latest intelligence in their areas of responsibility?

4. Coordination.

a. Has necessary coordination with the convoy been accomplished?

(1) Has point of pickup been designated? (IP)

(2) Has convoy commander been briefed?

(3) Has a secure area been designated in which to organize the convoy into serials and integrate the escort vehicles?

b. Has necessary coordination been accomplished with other Corps/Divisions/Sectors?

(1) What is originating point of convoy?

(2) What is termination point of convoy?

(3) What type cargo is the convoy carrying?

(4) What are the number and type of vehicles in the convoy?

(5) What type radio equipment is available in the convoy vehicles?

(6) What type and how many weapons are there organic to the convoy?

5. Support. Have provisions for vehicle recovery been made?

a. Does convoy have organic capability to accomplish vehicle recovery?

b. Has provision been made to have standby equipment available?

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c. Does convoy have the organic capability to make emergency repairs?

d. Has provision been made to have mechanics and spare parts available on a standby basis?

11. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

1. During operations in the Plei Ke area last month, difficulty was encountered in the determining of friendly troop actions. Further, friendly personnel were not at all times aware of their own location. Recommended solutions to this problem are the use of artillery concentrations at grid intersections and the use of smoke. However, if operations continue during the hours of darkness, these methods are less effective.

Lesson Learned

Two 30-inch searchlights can aid friendly personnel in determining their location at night by providing two points of resection. With two searchlights at known locations, the infantrymen can measure his azimuth to these points with his compass and plot the section on his map to determine his location. The searchlights would be elevated to 1600 mils to provide a beam high enough to be observed in low jungle terrain.

2. Rivers and streams with varying degrees of fordability have frequently become obstacles to units on patrols and large scale operations.

Lesson Learned

Units should carry at least 200 feet of rope per rifle company and enough ponchos to construct rafts for the transportation of radios, weapons, and non-swimmers across unfordable streams. Nylon rappelling rope was found to be particularly suitable.

3. During recent combat operations, target location was given to the aerial rocket artillery with reference to direction of flight. This method was found to be unsatisfactory in that the pilot was reacting to external commands and had no way to orient himself in relation to the target. A more effective procedure developed to locate the target was to select a distinct terrain feature and give the pilot an azimuth and distance from the feature. In the absence of a distinct terrain feature, a smoke grenade can be used.

4. In rugged or heavily wooded terrain ground observers frequently encounter difficulty in locating and adjusting the initial

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rounds. The aerial observer cannot always see the target. If both observers are monitoring the same radio frequency, desired results are most efficiently obtained by combining the capabilities of both observers. The aerial observer "walks in" the initial fires until the ground observer can assume control for the close-in adjustment.

5. Recent operations conducted in the Pleiku area revealed the potential of artillery in dispersing or preventing possible ambushes and assisting personnel to maintain direction while moving through dense terrain. The use of artillery fires to probe suspect enemy positions allows our forces to gain definite intelligence with minimum exposure of friendly personnel. WP or LB air bursts were particularly useful to the companies in maintaining a fix on its location and direction.

0. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. Due to the very nature of counterinsurgency operations, daily rear area patrols are mandatory, regardless of the proximity of the patrolling to the front lines. Daily patrols determine fluctuations in the sentiment of the local populace and develop intelligence useful to the patrolling unit, such as signs, markings, directional arrows, etc. Security of supporting units has been greatly enhanced by vigorous rear area patrolling.

2. A rapid "sweep" conducted by a large unit in VC territory seldom achieves a satisfying result, even when blocking forces are employed. The VC either get prior information of the sweep and evacuate, or they blend indistinguishably with the people, or they manage to exfiltrate. Greater success will be realized if the Marine units "stay awhile" after the initial "sweep" to conduct exhaustive search and patrolling of the entire area. During this period, caches can be found, intelligence information and material can be discovered, VC freedom of action and channels of communications will be disrupted, the confidence of the people can be gained and exploited, and VC could be caught filtering back in.

3. It has been the experience that large-scale operations have generally resulted in far less enemy contact than normal squad patrols and ambushes. Unless the VC feel that they have a superior force, it has been demonstrated repeatedly that they will avoid contact. Most successful contact with the VC has been as a result of squad patrols establishing the initial contact with the deployment of a rapid reaction force when necessary. (This method, using an armored reaction force has been very successful in a battalion TAOR.)

4. When reconnaissance units established OP's deep inside VC territory, they would almost always have numerous VC sightings. Seldom, however, could offensive capability be brought to bear against the target because of the time lag involved. Occasionally, effective

results were obtained from calling artillery fires on the larger targets. An OP concept was adopted by infantry units to include an emphasis on offensive capability. OP's deep in VC territory have been established, usually in conjunction with nearby friendly operations. These OP's are inserted by helicopter and include a dismounted 106mm RH, a mortar squad, sniper teams, artillery and mortar FO's, and sufficient infantry (usually a platoon (-) (rein) for security. The mission of the OP unit is to be inserted by helicopter on a dominant hill, establish and secure an OP and observe for VC targets of opportunity. Any target in range is engaged by an appropriate weapon. Large targets may be engaged by artillery. Small fast moving, elusive targets may be immediately engaged by the recoilless rifle or mortar. Individual VC within 500 meters may be shot by the sniper team. This technique is best employed in an area where the VC have had long-standing freedom of action and are not accustomed to having to conceal themselves at all times. It is also best employed in conjunction with a nearby large scale offensive ground operation which tends to "stir up" the VC in the area.

5. The most common type of contact with the VC is a sniping incident. The sniping ranges from a single sniper, who shoots a quick round or two then disappears, up to a squad of snipers firing heavily for several minutes and taking on more of the character of an ambush. Almost always, these incidents take place at long range, 300 yards or more, and the VC fire is rarely effective. Also almost always, the snipers are so well concealed the Marines cannot see a target to engage. A common tendency is for men who cannot see a target to withhold their fire. Another common tendency is to reply on rifle fire alone, which has very limited effectiveness against the well-covered and well-camouflaged VC. Most effective of all is an immediate and heavy volume of all type fires placed on likely sniper positions in the general area from which the sniper fire is coming. Rockets, M-72 LAW's, M-79 Grenades and rifle grenades will almost invariably establish immediate fire superiority for the Marines and cause the VC to break off and run. It is during the VC withdrawal that the best opportunity to inflict casualties arises, again with emphasis on saturating the VC position with all fires.

#### Lesson Learned

Have combat patrols carry 3.5" and M-72 rocket launchers, M-79 grenade launchers and rifle grenades. Train troops to respond immediately with these fires against snipers, whether or not a specific target is identified.

P. United States Army Vietnam, dated 24 November 1965.

#### Incident/Observation(s)

1. In ambushes of patrols on their routes of movement, the VC use mines to attack possible motorized reinforcements.

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2. In the ambush of motorized equipment, the VC emplace mines in the roadway, wait for the vehicles, touch off the mines and withdraw. To counteract mine detection teams, methods of attack were improved by using various forms of camouflage, diversionary actions, counter-action to mine detection and by activating lightly equipped cells (3 men), or squads, for attack with grenades and mines. When objectives appropriate to VC capabilities and equipment are located for destruction, mines and bombs are used to destroy convoys. To attack a small number of vehicles (3 to 5), ambushes are conducted in conjunction with bombs, mines and explosives for destruction of vehicles and seizure of weapons.

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Section V (continued)

Q. After Action Report, 2d Battalion, 27th Infantry, 25th Division, dated 3 February 1966.

Incident/Observation(s)

1. When a tunnel is being blown, caution should be taken to avoid casualties caused by secondary explosion of caches in the tunnel.

2. Care must be taken that the detonation of one tunnel does not trap a friendly tunnel searcher working in a connecting tunnel. The best way to avoid this is to divide the area into tunnel search zones. Those tunnels running close to the zone boundary require coordination between search and destroy elements before one is blown. Complete search of all tunnels will minimize the possibilities of trapping a friendly.

R. Operation Paddy Bridge (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

When reporting incoming fire over the radio, commanders should disguise the accuracy of this fire (i.e., if it is short, then report it as long; if it is long, then report as short, etc.). The VC appear to be monitoring unit frequencies and adjusting their fire based on friendly commanders' reports. BREVITY CODES NEEDED - FUB

S. MACV Lessons Learned No 56, dated 16 April 1966.

Incident/Observation(s)

The use of tunnels by the VC as hiding places, caches for food and weapons, headquarters complexes and protection against air strikes and artillery fire has been characteristic of the guerrilla nature of the war in Vietnam. The detection, exploitation, neutralization and/or destruction of these tunnel systems continue to be a major problem.

Lessons Learned

1. Tunnel techniques.

a. A trained tunnel exploitation and denial team is essential to the expeditious and thorough exploitation and denial of Viet Cong tunnels. Untrained personnel may miss hidden tunnel entrances and caches, take unnecessary casualties from concealed mines and booby traps and may not adequately deny the tunnel to future Viet Cong use.

b. Tunnel teams should be trained, equipped and maintained in a ready status to provide immediate expert assistance when tunnels are discovered.

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c. Careful mapping of a tunnel complex may reveal other hidden entrances as well as the location of adjacent tunnel complexes and underground defensive systems.

d. Small caliber pistols or pistols with silencers are the weapons of choice in tunnels, since large caliber weapons without silencers may collapse sections of the tunnel when fired and/or damage eardrums.

e. Personnel exploring large tunnel complexes should carry a colored smoke grenade to mark the location of additional entrances as they are found. In the dense jungle it is often difficult to locate the position of these entrances without smoke.

f. Two man teams should enter tunnels for mutual support. The second man can assist the first in emergencies.

g. Tunnel team members should be volunteers. Claustrophobia and panic could well cause the failure of the team's mission or the death of its members.

h. Constant communication between the tunnel and the surface is essential to facilitate tunnel mapping and exploitation.

2. Tunnels are frequently outstanding sources of intelligence and should therefore be exploited to the maximum extent practicable.

3. Since tunnel complexes are carefully concealed and camouflaged, search and destroy operations must provide adequate time for a thorough search of the area to locate all tunnels. Complete exploitation and destruction of tunnel complexes is very time consuming, and operational plans must be made accordingly to ensure success.

4. The presence of a tunnel complex within or near an area of operations poses a continuing threat to all personnel in the area. No area containing tunnel complexes should ever be considered completely cleared.

5. Current chemical denial methods are only temporarily effective against tunnel complexes. Test results to date indicate that CS-1 effects should last about seven days. Extensive research and development efforts have been requested in the entire field of tunnel location and denial to provide increased effectiveness in operations against tunnel complexes.

6. A representative equipment list for a tunnel team is shown below:

- a. Protective Masks - one per individual.
- b. TA-1 telephone -- two each.

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- c. One-half mile field wire on doughnut roll.
- d. Compass - two each.
- e. Sealed beam 12 volt flashlights - two each.
- f. Small caliber pistols - two each.
- g. Probing rods - twelve inches and thirty-six inches.
- h. Bayonets - two each.
- i. Mity Mite Portable Blower - one each.
- j. M7A2 CS grenades - twelve each.
- k. Powdered CS-1 - as required.
- l. Colored smoke grenades - four each.
- m. Insect repellent and spray - four cans.
- n. Intrenching tools - two each.
- o. Cargo packs on pack board - three each.

T. Headquarters, 2d Brigade, 1st Infantry Division, Operation HASTIFF, dated 31 March 1966.

Incident/Observation(s)

1. The uncovering of large VC rice caches has continually presented a major problem to the unit making the discovery. In many cases it is not possible to extract the rice, and thus it must be destroyed. In addition to the method of exposing the rice to water, another effective technique of rice destruction has been utilized.

Lesson Learned

An effective means of destroying rice by burning has been found. Gasoline, diesel oil and unused artillery powder increments are mixed in with the rice to insure a hot fire.

2. The following are two techniques that have been effectively used on operations directed against VC base camps or fortified areas:

a. "As the VC invariably evacuate their base camps when they are under attack, a wide enveloping maneuver is the best approach to this type of attack. Ambushes should be established to the flanks and rear of the VC position. Frequently, there are not enough VC defenders to man all defensive positions in the camp. For this reason, contact should be spread to several points."

*V*-16

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b. The VC cut fire lanes close to the ground. Frequently these cannot be seen by a standing man. Men must be instructed to squat down and look for them, particularly when approaching a VC fortified position.

"TUNNELS" IN THE VEGETATION  
OPEN SPACES AT GROUND LEVEL OFTEN EXIST NATURALLY BECAUSE OF LACK OF SUNLIGHT.  
LOWER LEAVES DIE, FALL OFF.

U. 2d Brigade, 1st Infantry Division, Operation MALLET, dated 7 March 1966. FMB

Incident/Observation(s)

During Operation MALLET, the following two techniques proved quite successful:

a. One was used when a battalion was moving through jungle in a tactical march column. Normal security was employed to the front, flanks and rear; however, it was known that the VC were following the unit at a distance to maintain contact and keep informed of its location and activities. The technique used was to halt the battalion for a break, an ambush of approximately platoon size then being established in the center of the battalion position where its establishment could not be observed by the VC trail party. The battalion then resumed its march, marching right through the ambush position. The ambush remained in place waiting for the VC trail party to come up. This technique was used on two occasions and produced kills both times. The ambush remained in position until the battalion had moved off approximately 1,500 to 2,000 meters, and then it picked up and trailed the battalion, hoping to get additional kills from VC who believed the US forces to have passed.

*stay-behind ambushes -*

b. The second technique involved placing the reconnaissance platoons of all the infantry battalions under brigade control for the operation. This provided the brigade with three highly mobile and flexible units with a great deal of fire power available to deal with the variety of situations which arises during an operation. These platoons were used to:

- (1) Investigate intelligence reports of VC activity in the area.
- (2) Screen flanks and rear of brigade elements.
- (3) Provide route and area reconnaissance.
- (4) Screen areas to be occupied by the brigade.
- (5) Provide armed escorts for supply convoys, Psy. War/Civil Affairs Teams and Medcap patrols.
- (6) Provide security for brigade installations at night.
- (7) Conduct village searches and establish highway check points.
- (8) Show of force missions.

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Section V (continued)

V. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Montagnard scouts or other indigenous personnel, that is Regional forces, Popular forces and District Personnel, should accompany each company-size unit during combat operations to facilitate movement in unfamiliar areas as well as for timely recognition, interrogation and processing of suspects.

2. Incident/Observation(s)

This unit had previously learned that the optimum size a Recondo patrol was a TOE squad (+) (approximately ten men). Over a period of time and in spite of strenuous efforts to move personnel forward, the strength of rifle squads decreased, in some cases to as low as five or six men. On a couple of occasions squad-sized (5 men) Recondo patrols were practically put out of action when they suffered a serious casualty since the remainder of the men had to assist in extracting the casualty.

Lesson Learned

The Recondo patrol of 10 men or more produces better results; the individuals have greater confidence in their own ability to engage and destroy the enemy. The patrol has greater staying power, the ability to extract and/or care for its wounded and greater tactical flexibility.

3. Incident/Observation(s)

When operating in dense mountainous terrain where LZs are few and far between, introduction of reserve force in time to influence an action is next to impossible. Additionally, the dense terrain usually limits an engagement to a few people at a time, normally the point or lead element.

Lesson Learned

When operating in such terrain, the axis of advance must be carefully analyzed and the forces to be committed must be properly weighted for a particular axis. By utilizing all available forces and not withholding a reserve, per se, an area of operation was saturated. During this operation, the battalion committed forces on six axes simultaneously. A Co, two axes, E Co one axis, C Co two axes and a Provisional Company one axis. Axes were selected so that forces could be mutually supporting. When terrain precludes introduction of a reserve force in time to influence the action, an equivalent result can be obtained by saturating the area of operations with forces on multiple axes.

*line of companies in columns or in multiple columns.*  
FVB

4. Incident/Observation(s)

Employment of the LRRP during Operation HARRISON demonstrated complacency of the enemy in areas he considers safe. Undetected infiltration of the LRRP teams allowed for the exploitation of this complacency.

Fire discipline is especially important for LRRP teams because the VC employ decoys to draw fire when a small party is suspected in the area. Therefore, patrol leaders must be able to determine when their fire is being solicited and when it is actually needed for protection.

5. Incident/Observation(s) *How do they do this? FUB*

The optimum drop altitude for the M7A3 grenade is 100-300 feet. This has resulted in a new technique of delivery in which Arty prepares the target and screens it with a WP preparation to afford concealment for the delivery ship. The best method of exploiting this type of RCA attack against VC units and personnel is to exploit the effects of RCA with Arty as soon as the delivery ship has cleared the target area.

W. 1st Infantry Division, Lessons Learned, dated 15 March 1966.

Incident/Observation(s)

Crossing water obstacles. Due to map inaccuracies, heavy run off in the wet season and limitations on aerial reconnaissance imposed by heavy jungle canopy, units often find themselves confronted unexpectedly with serious water obstacles where none were anticipated.

Units should plan for this contingency and should carry at least one 120 foot climbing rope and five snap links per platoon. One air mattress per squad is desirable to ferry radios, machine guns and 81mm mortar ammunition.

X. 173d Airborne Brigade (Operation PHOENIX), dated 6 May 1966.

1. Incident/Observation(s)

Movement of company-size units in secondary jungle is limited to 300 meters per hour or less, thereby increasing the time required to reinforce friendly elements or maneuver to cut off withdrawing enemy. Consideration must be given these factors when assigning search and destroy missions so that response of subordinate units in the contingency of a meeting engagement will be timely.

2. Incident/Observation(s)

Due to limited visibility in secondary jungle and the fact that the VC emplaces machine guns in well dug in and concealed positions, and due to his habitual employment of the Hugging Tactic, it is

advisable to initially fire artillery at a greater range and systematically walk it toward the friendly positions.

3. Incident/Observation(s)

When the enemy breaks contact, maintain continuous artillery fire on his suspected routes of withdrawal and assembly areas. In many cases this will be the only effective possible means of pursuit.

4. Incident/Observation(s)

TAC Air use of COB is effective against enemy troops in the open; however, it has little effect against a dug-in enemy, and employment is not accurate enough to guarantee safety to friendly troops when used in close support.

Y. 173d Airborne Brigade (Operation SILVER CHIEF), dated 15 April 1966.

1. Incident/Observation(s)

Each unit must patrol aggressively around its night position. On 16 March the 2/503d Infantry was surprised by a VC Regiment. Only the superior firepower and aggressive fighting spirit of the troops prevented the unit from being hurt severely.

2. Incident/Observation(s)

When two units are moving to link up with each other, one unit should move to a certain pre-designated point, stop and await the arrival of the other unit. Thus only one unit is moving, and there is less problem of linking without firing at friendly forces.

3. Incident/Observation(s)

When a battalion is moving from one point to another in the jungle, it is hard to move on more than one axis (mutually supporting axes). In this situation, the two columns usually bump into each other continuously. *not if axes are assigned and steering marks used* B

C. 25th Infantry Division (United States), dated 1 January 1966-30 April 1966.

The following are some Lessons Learned during this period by two of the maneuver battalions:

1. Evacuation of wounded during the attack must be delayed. There is little more that can be done for these casualties at the platoon or company command post that cannot be done in their firing positions. Every available man must be kept on the perimeter shooting. This includes individuals who are lightly wounded. In addition, evacuating the wounded tends to confuse men along the line who feel they missed getting the word about a withdrawal.

2. A night defense supplemental package brought in when the unit stops to defend and taken out in the early morning is a must. However, the decision must be made early enough so that this package can be brought in before darkness. This battalion has established an SOP package consisting of the following items.

- 20,000 rounds 5.56mm for M16 rifles
- 8,000 rounds 7.62mm for M14/M2 rifles
- 12,000 rounds 7.62mm for M60 machineguns (2,000 rounds per machinegun)
- 1 .50 caliber machinegun and 5,000 rounds of ammunition
- 500 hand grenades
- 400 40mm rounds for M79 grenade launchers
- 50 rounds of 81mm M2 per mortar
- 25 Claymore mines
- 30 LAMs
- 30 trip flares
- 2 flamethrowers
- AP mines
- Extra radios

3. Defensive fires must be well planned for all indirect fire weapons. One technique is to plan priority fires for the artillery to the front of one platoon, 4.2-inch mortar to another and 81mm mortar for the remaining platoon. This should insure accurate and responsive fire in all sectors. The flexibility of massing or shifting any combination of these fires to support any one platoon is still a reality.

4. The battalion SOP for shifting an ambush position after any contact with the Viet Cong was proven valid. The ambush patrol in the north was shifted west and later caught the Viet Cong by surprise. The Viet Cong appeared to avoid the patrol's original location where contact had been made earlier.

5. The occupation of existing fortifications and trench networks dug by the Viet Cong invites trouble. They are familiar with them and know the weak spots well. When limited time requires that Viet Cong fortifications be used as hasty shelters, hasty firing pits should be cut into the trench to lessen the vulnerability from fire down the trench lines. Claymore mines should be set up in the trenches to cover areas which cannot be physically occupied. Units cannot "hunker down" and stop digging after dark, but must take the calculated risk of the noise involved and continue their defensive preparations, covered by outposts.

6. The employment of a rifle company without reinforcements in an isolated defensive perimeter invites Viet Cong attacks. Its validity is suspect. Actually this may have potential as a good way to "bait" a sizable Viet Cong force, but reaction forces must be predesignated by higher headquarters and have coordinated plans to respond immediately. The reaction force must be capable of being effectively deployed and fighting

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in the hours of darkness, during the first hour after engagement. It cannot wait until first light because the Viet Cong base their attack on the assumption that such a force will wait.

NIGHT OPERATIONS

7. Personnel carriers attached to an isolated company defensive perimeter greatly enhance the unit's ability to react. The M1 machineguns augment the company's firepower. Further, a vehicle is available to move casualties, equipment or ammunition, as may be required.

8. Machinegun positions must be especially well prepared and protected. They become the prime targets of Viet Cong small arms and grenades. FIREWG 01- LONG BURST AIDS LOCATION OF MGA -  
2-3 ROUND BURSTS SOUND BETTER W/ OTHER SMALL ARMS SOUNDS.

9. Landmarks such as buildings should be avoided as command post locations. They are usually well known by the enemy and easy to identify as targets for accurate fire.

10. Platoon sergeants and squad leaders must be familiar with the frequencies for the company and battalion command nets and the artillery fire direction net. In a matter of minutes, one of these leaders may be the platoon leader.

There exists a definite need for the radio communications from platoon to squad in the defense. Even the unreliable AM/PFC-10 is better than no communications. Extra AM/PFC-10 radios could be brought in for use by the squads during the night.

All patrol leaders should be given the battalion command net frequency in case the company command net ceases to function. Battalion can advise the patrol of the situation and provide indirect fire support, as may be required.

11. A company can employ all the Claymore mines it can get in the defense. They can be employed in depth with the majority being placed right next to the defensive foxholes. As mentioned above, they also would be useful to place in Viet Cong trenches leading into the position which cannot be covered adequately or occupied.

12. Squad leaders must be brutal in their insistence that positions are well prepared and improvements are continually made. When the situation demands, such improvements may be continued after dark covered by patrols and outposts. A calculated risk must be taken between the noise and lack of security involved and the need of an adequate defensive position.

13. It is unlikely that patrols will be able to withdraw back to friendly lines when the Viet Cong are conducting a major attack. Adequate ammunition must be on hand to sustain the patrols in such situations. These patrols become a ready reserve for the company commander and can be used as maneuver elements to ambush withdrawing Viet Cong units if alerted by the company command post. They also can be maneuvered into positions which would place the Viet Cong in a devastating cross fire.

THEY CAN ALSO BE CAUGHT IN CROSSFIRE BETWEEN  
ENEMY & FRIENDLY UNITS - PLB  
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14. Early probing action may be a prelude to a major attack and cannot be taken lightly, particularly if Viet Cong are encountered at about the same time in several areas in the vicinity of the defensive perimeter.

15. 0400 hours appears to be a good "stand-to" time for defending units.

16. Time permitting, companies should prepare hasty supplementary positions. In any event, the company defense order should include the location of secondary positions that platoons will withdraw to in the event withdrawal becomes necessary.

17. The bayonet for the M16 rifle should be issued as soon as possible. One more attack by Viet Cong and, due to a shortage of ammunition, the bayonet would have become Company A's primary weapon.

*THE ANSWER MAY BE TO RESERVE AMMO BY HCPTR. F/A*

18. Plans to attack the withdrawing enemy must be aggressively executed. Aggressive follow up by major units of a brigade task force to find and fix the enemy is a necessity. After a major action, the Viet Cong force can be assumed to be low on ammunition and faced with immense problems of reorganization, evacuating dead and wounded, and hiding from a fresh pursuing force. All other plans should be altered to take advantage of this unique opportunity. This appears to be an excellent time to employ armor and mechanized infantry in conjunction with widely scattered Eagle flights of reinforced platoon size with ready airmobile reaction forces on standby. This reaction force must be capable of attacking and fighting in the darkness that the Viet Cong invariably uses to cover his withdrawal. Tanks and personnel carriers with starlight driving devices, or even with lights on, should be considered.

19. In conjunction with the above, adequate time must be allowed for a detailed battlefield search in the general vicinity of the action. Valuable documents, weapons and equipment can be obtained. This is not the time for haste.

*AP MINES -*

20. Small pressure mines placed on the ground approximately 25 meters from friendly positions will assist in the night defense. They can be recovered in the morning without danger if no attack occurs.

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Section VI. Knowledge of Current Use of Weapons and Equipment.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-26 (PL), dated 16 October 1965.

1. Incident/Observation

"The weapons platoon is often employed as a fourth maneuver platoon because of terrain limitations on their organic heavy weapons."

Lesson Learned

"The weapons platoon should be augmented with at least 1 M-60 machine gun and 13 M-14s to add firepower to the platoon."

2. Incident/Observation

a. Both 81mm mortars and 60mm mortars should be available. The unit would be able to select the appropriate indirect fire weapon depending on terrain and mission."

b. "Fewer selector switches should be put on M-14s. Many times single, well-aimed shots are more effective than a burst from an M-14 on automatic. Individuals waste ammunition firing M-14s on automatic, and the fire is often not effective because the weapon has a tendency to climb when fired on automatic."

Lesson Learned

*we reported this in 1960-61 and had our whistle slapped FCB*

"The M-14 L2 is an effective automatic weapon."

B. Antiaircraft Capability, Viet Cong Forces, Republic of Vietnam. Serial. CIGPO, dated 24 December 1965.

1. Confirmed AA Weapons:

- a. Soviet sg43/SGM 7.62 MG.
- b. CHICOM DShK M1938/46 (mod 54) 12.7mm HMG.
- c. US 50 Caliber M2 MG.
- d. German MG 34 7.92mm MG.
- e. CHICOM Copy Maxim MG 7.92 MG.

2. AA Weapons NOT Confirmed But in Possible Use:

a. 60mm mortar tube modified and mounted for AA Fire. Projectile has local manufacture fuse with possible time delay varying from 650 to 1300 feet.



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- b. US 20mm cannon removed from downed aircraft.
- c. Viet Cong fixed directional mine. Effective range 150-250 meters.

C. CBR Technical Report No. I by US Army Headquarters, Vietnam, dated 24 December 1965.

1. Incident/Observations

Suggested methods of dealing with Viet Cong tunnels:

- a. "To clear enemy troops out of the tunnels, the gas from the M7A3 gas grenades should be blown into one of the tunnel entrances using the Mity Mite blower. One or two grenades should be adequate for most systems. The Mity Mite can then be used to blow some of the CS gas out of the tunnel so that it can be searched. DO NOT use HC Smoke unless oxygen masks are available."
- b. Searchers should work in teams of two or more men. Searchers should be equipped with the TA-I or other sound-powered telephone. This speeds up the work and adds to the safety of the team.
- c. If a trap door or airlock is discovered in the tunnel, it can be removed and the Mity Mite be used to blow the CS gas which still lingers farther into the tunnel complex.
- d. When a main tunnel of a complex is discovered, a demolition charge set off in it may unseat any additional trap doors or air locks. This will enable further flushing and searching.
- e. After tunnels have been searched, they should be destroyed with demolitions and/or contaminated with CS-I powder. One good way of doing this is to place a six-pound bag of CS-I powder on a strand of detonating cord between cratering charges inside the tunnel.
- f. When time is limited, CS grenades - M7A3 - blown into the tunnel by Mity Mite will contaminate the tunnel for about one week.

2. Incident/Observations

The CS gas grenade M7A3 has been used in Viet Nam in the following ways:

- a. Thrown by hand into tunnel mouths.
- b. With the Mity Mite Blower.
- c. Dropped from homemade launchers mounted in helicopters. It is reported that up to 400 grenades have been dropped at one time, thus establishing a very high concentration of CS gas in a local area.

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D. 1st Cavalry Division, dated 15 November 1965.

Incident/Observation(s)

"It took time to reload M-16 magazines, one round at a time. In the heavy action we encountered, this took excessive time at critical periods. It was particularly critical during the enemy night attack. Also it was difficult to keep track of empty magazines in a heavy fire fight."

Lesser Learned

A need exists for an expendable, plastic type magazine which is resupplied to the rifleman fully loaded in a bandoleer similar to the old M-1 clip of eight rounds.

E. 1st U. S. Division, dated November 1965.

Incident/Observation(s)

Extra M-14s are needed on convoys for men normally armed with 45 caliber pistols.

F. Letter, AVIE-CH, 1st Infantry Division, dated 8 February 1966, subject, "Employment of Experimental Riot Control Agent Munitions in Combat Operations (U)."

Incident/Observation

Riot Control Agent Munitions (E-158 Clusters and E-8CS Rocket Launcher) were employed in support of combat operations. All the targets on which the CS was used were on-call type targets which were presented during search and destroy operations.

Lessons Learned

1. Because of the inherent search characteristics of riot control agents, particularly when employed under natural or inversion temperature gradient, the E-158 Cluster can be profitably used for reconnaissance. The technique recommended is to deliver E-158 Clusters on suspected enemy concentrations; if movement is observed, air strikes and/or artillery can be placed on the target to destroy the enemy.

2. In all cases of employment of riot control agents, immediate exploitation of its effects must be accomplished by ground forces, air strikes, and/or artillery.

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Section VI (continued)

G. Observations of USAIS Instructor in Vietnam, dated  
28 February 1966.

Incident/Observation(s)

Recently a member of the Machine Gun Team of the USAIS Weapons Department completed a fact-finding trip to Vietnam. He visited all the American units in KVM, and listed below are some of the questions that were asked and the answers that were received:

1. Question: "Which type of stoppage or malfunction occurred most frequently?"

Answer: "Asked of all units in Vietnam, most malfunctions and stoppages were caused by excess dirt and mud. No major stoppages due to malfunctions of parts or design of weapon."

2. Question: "Are the M60's habitually carried on offensive missions, Reinforced Rifle Squad, Rifle Platoon Company and Battalion Operations?"

Answer: "From all units, yes. From the personnel questioned by me (Platoon level), the best weapons in Vietnam were the M-16, M-60, M-79."

3. Question: "When firing from the assault fire positions, is the bandoleer attached to the gun, or is the extended belt used?"

Answer: "Although the extended belt wrapped around the gunner proved unsatisfactory, the bandoleer was unsatisfactory due to hanging on brush and pushing the weapon off balance. The cardboard box gets wet, and rounds hang in bandoleer. Some gunners place approximately 20 rds in feed way when moving; if enemy is engaged, the assistant gunner removes a bandoleer from ammunition can and clips another one hundred rounds on belt in feedway. Other gunners were using the bandoleers, but carried them in metal cans to keep dry. Also complained about pulling gun off balance."

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4. Question: "Are range cards prepared for the M60's when in defensive situations? Were they effective?"

Answer a: "The answer I received for this question was yes, however, the ones that I personally checked were incorrect."

Answer b: One unit stated that they used it once in the field, and it was very effective. I didn't see this range card or the reading, but checked a sample card for this unit and found it completely wrong.

5. Question: "What is the greatest performance deficiency of the machinegun in Vietnam?"

Answer: "From my own personal observations, I would say a basic lack of information concerning the weapon. This situation could be eliminated on the spot if Officers and Senior NCO's were more knowledgeable of the weapon and were willing to train their men. Most units that I encountered had junior NCO's that were very willing to learn but just didn't have the information available to them from Senior NCO's and Officers."

6. Question: "Are Rifle Platoon Leaders in Vietnam sufficiently knowledgeable on the capabilities and employment of machineguns?"

Answer: No, for same reasons stated previously. If leaders are knowledgeable, they are not training their gunners.

E. Lessons Learned (1 October -30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

1. Although the SS-11 missile was designed as an antitank weapon, it has been found to be a particularly effective weapon against a number of hard targets. In one recent operation, the VC took shelter in a masonry building. Attacks initially with 2.75 in rockets produced little results. A single SS-11 missile delivered from a helicopter quickly destroyed the house. In another action west of Pleiku, the SS-11 was used several times to blow barricades around a village where pinpoint accuracy was needed to avoid destruction of neighboring houses. The SS-11 has demonstrated its capabilities for destroying fortifications that can be observed from the air.

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2. Aidmen have found pole litters to be difficult to handle in dense vegetation such as occurred near the Chu Pong Mountain area. Consequently, litters were left behind, and improvised poncho litters were the only ones available. In some areas, litters could not be made due to the absence of small trees or limbs of suitable size, as in some of the elephant grass areas near Plei Me. In these areas, patients occasionally were evacuated to helicopter sites by hand-carry methods.

Lesson Learned

Tactical and medical units operating in areas described above should order and use the non-rigid poleless nylon litter, FSN 6530-763-7510, weight 3.5 pounds.

3. Several general malfunctions have occurred during recent operations with the M-16 rifle. These malfunctions with recommended corrective action are:

a. Rounds are difficult to extract after being in the chamber during the cooling-off period. Hot weapons should not be allowed to cool with a round in the chamber if the tactical situation will permit.

b. Magazines fail to seat properly because the magazine retaining clips become bent. Do not slam magazines into the weapon, which bends the retaining clips, but push firmly until the clips secure the magazine in place.

c. Selector switch freezes in one position. Selector switches should be kept well oiled.

I. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. The M-79 grenade launcher has proved to be an extremely effective small anti-sniper and anti-ambush weapon under conditions of reduced visibility. During experiments conducted by one rifle company, it was determined that the M-79 could also be hastily used as an indirect fire weapon. The procedure is to have grenadiers loosen the sling to a predetermined length and then place the butt of the weapon on the ground, elevating the muzzle and positioning the foot on the sling at the correct position, so that the desired elevation can be obtained and held. Through trial and error, an M-79 round can be "registered" in the desired spot, and the sling is then marked so that the grenadier need only replace his foot on the marked position on the sling, judge the correct deflection and fire.

2. There are many Marines who fail to use body armor in offensive operations. The claim being that it slows troops down and tires them out. This has been proven erroneous. During normal operations, conditioned Marines who have been required to wear the body armor (upper torso

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only), become accustomed to it and can readily keep up with troops not wearing it. Moreover, it has been found that troops wearing body armor move out with greater confidence and aggressiveness. Normal operations in Vietnam consist of search and clear missions and patrols, neither of which require extensive running or extreme physical activity. It is recognized, that in mountainous areas during hot weather, it may be necessary to dispense with the body armor due to the extreme physical exertion required. Numerous Marine lives have been saved by the "flak" jacket in this Division. There have been instances of the jacket deflecting direct hits with carbine bullets as well as close range grenade fragmentation. After noting these examples, Marines are easily convinced of the advantages of wearing body armor.

Lesson Learned

Publish the advantages of body armor. Dispel the misconception that troops cannot operate effectively in Vietnam while wearing it. In appropriate cases, require it to be worn.

3. Experience has shown that a great many VC mines are controlled detonation electric type. Most often, lead wires to mines are communications wire. Further, for expedience, most land lines are laid along the existing routes of communication. This situation makes it extremely difficult to distinguish VC lead wire from friendly communications lines. When communications wire is moved away from roads and other lines of communication, lead lines to mines and other foreign matter are more easily detected.

Lesson Learned

That in all forward tactical areas, all US laid communications wire be at least twenty meters away from utilized roadways. This produces an expeditious method for visual detection of mines electrically detonated from points off the roadway.

4. Rapid trail shifts and accurate relay of the 105mm howitzer can be accomplished by placing a GI can cover beneath the left howitzer wheel. The GI can cover permits the locket left wheel to spin easily through 6400-mils while keeping the axis of the panoramic telescope constant. One circular trail pit will accommodate both trails. The right trail rests against the rear wall of the pit, while the left one is blocked to fill the void between the spade and the rear wall of the trail pit.

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(Section VI continued)

J. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. Use of the high explosive and illumination round fired from the 155mm howitzer, M123A1, on perimeter defense has proved to be reliable and highly effective. Data below was derived from direct and illumination firings conducted by an Artillery battalion in RVN.

DIRECT FIRE

| <u>PROJ</u> | <u>CHARGE</u> | <u>ELEV</u> | <u>FUZE SETTING</u> | <u>BURST RANGE</u> |
|-------------|---------------|-------------|---------------------|--------------------|
| HE          | 1             | 140         | 2.7                 | 550M               |
| HE          | 1             | 120         | 2.5                 | 500M               |
| HE          | 1             | 100         | 2.0                 | 425M               |
| HE          | 1             | 100         | 1.9                 | 400M               |
| HE          | 1             | 100         | 1.5                 | 350M               |
| HE          | 1             | 80          | 1.5                 | 275M               |
| HE          | 1             | 85          | 1.3                 | 250M               |
| HE          | 1             | 85          | 1.0                 | 225M               |

\*All bursts indicated were air; mean height of burst 20-25 meters.

ILLUMINATING SHELL

| <u>PROJ</u> | <u>CHARGE</u> | <u>ELEV</u> | <u>FUZE SETTING</u> | <u>RN</u> | <u>FLARE BURNING TIME</u>         |
|-------------|---------------|-------------|---------------------|-----------|-----------------------------------|
| ILL         | 1             | 1000        | 5.0                 | 1200M     | Burned out on ground contact      |
| ILL         | 1             | 1050        | 5.0                 | 1000M     | Burned out on ground contact      |
| ILL         | 1             | 1100        | 4.5                 | 800M      | Burned out on ground contact      |
| ILL         | 1             | 1150        | 2.0                 | 250M      | 1/3 of flare burned on the ground |
| ILL         | 1             | 800         | 2.5                 | 450M      | 1/3 of flare burned on the ground |

\*Extreme care must be exercised to insure that flare is not wind blown into the battery area.

2. Use of the high explosive and illumination round fired from the 105mm howitzer for additional perimeter defense support.

a. The use of charge 1 lowers the muzzle velocity of the 105 howitzer to a point where simple computations can be made rapidly for shooting high explosive projectiles with time fuze. The mechanical time fuze, having a bore-safe feature, has a minimum arming time of 0.7 seconds. Thus a time setting of less than 0.7 seconds will render the fuze, "point detonating only," and must strike the ground or an object to detonate the round. Air burst can be achieved by the use

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of a standard elevation of 80 mils above the terrain at the perimeter and a fuze setting achieved by dividing the range (in hundreds) to the target by 3; for example, a range of 300 meters, a time setting would be 1.0 seconds. This approximation holds true for ranges out to approximately 800 meters.

b. Perimeter illumination using high angle fire. Illumination of the perimeter using howitzers in position can be achieved with a simple system using charge 1. The use of charges greater than charge 1 may create malfunction of the parachute and produce a streamer. The use of maximum elevation or approximately 1150 mils will insure a trajectory that at 7.0 seconds fuze setting will give a burst at approximately 1000 meters HOB and 400-500 meters in front of the piece. In order to lower the HOB 100 meters, a setting of 5.5 seconds would be required. The average round will burn out just prior to impact with a time setting of 6.0 seconds or a HOB of 800 meters. In order to increase the range from the gun by 100 meters, the elevation is lowered 50 mils and the time increased 0.5 seconds for ranges over 600 meters. This is an approximation to a range of 1000 meters.

3. Current artillery TOE authorization for wire, WD-1/TT is inadequate to support "double" requirements imposed in Vietnam, i.e., maintenance of base camp areas and simultaneous requirements for landline communication during combat operations away from base camp area. A significant amount of wire is normally permanently installed in the base camp area, thereby reducing the quantity of TOE wire available for use in support of combat operations.

4. Due to the lack of survey control, three and four point graphical resection has been used to determine the battery center or battalion SOP. One of the resected rays is used as an orienting line. When survey control has been brought in, the direction and location have been found to be about three to five mils and 20 to 40 meters in error. The azimuth gyroscope has been found to be erratic when used in the vicinity of helicopters and is only added weight for airmobile operations.

Graphical resection, both for location and direction, has been an acceptable solution to lack of survey control.

K. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. When one flare ship relieves another, a period of adjustment is required. The initial flares dropped by a flare ship are not always positioned effectively. During the initial adjustment period, the enemy takes advantage of darkness to probe defensive positions.

Lesson Learned

The ground commander must employ artillery and mortar illumination rounds until the flare ship has established its pattern. The

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ground commander must relay the maximum ordinate of artillery and mortar fire to the flare ship so that it may operate safely.

2. The 3.5 inch rocket launcher, although useful in villages and along the edges of clearings, has proven cumbersome and ineffective in heavily vegetated areas.

Lesson Learned

When available, the M-72 LAW is far more effective in the jungle than the 3.5 inch rocket launcher.

Section VI (continued)

L. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

Incident/Observation(s)

Free drop of supplies due to the non-availability of landing zones. A lack of landing zones in the recent area of operations dictated that all supplies had to be free dropped. Initial free drop supply deliveries were accomplished by dropping unrigged unsecured supplies from a moving helicopter. This was found unsatisfactory as the dispersion pattern of the unsecured supplies was approximately 300 to 400 meters. To limit this unsatisfactory dispersion pattern, we utilized the A-21 (door bundle) container which will contain a load of 500 pounds. It was determined that two A-21 bundles could be dropped simultaneously, thereby delivering 1000 pounds of supplies to the unit on the ground.

Lesson Learned

A-21 containers can be used to effect a satisfactory delivery of supplies to units located in areas where LZs are not available. To lessen the impact of the A-21 containers and reduce breakage, the poncho parachute can be used when standard parachutes are not available.

M. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Abrasion of helicopter rotor blades. The operation of UH-1 series of helicopters in the sandy environment along the coastal regions of Vietnam creates an abrasion problem with main and tail rotor blade leading edges often requiring premature replacement. Main rotor blades have required replacement upon the accumulation of 204 flying hours as opposed to normal replacement time of 2500 hours. Application of vinyl tape as outlined in TM 55-1520-210-20 to the leading edge of main rotor blades has not been effective in the reduction of abrasion.

To reduce abrasion, take-off's and landings should not be accomplished from a hover when operating in sandy areas.

N. 173d Airborne Brigade (1 October 1965-31 December 1965), dated 14 March 1966.

Incident/Observation(s)

The weapons systems used by this brigade have proven to be only partially dependable. The M-16 Rifle and the M-79 Grenade Launcher are very effective. The simplicity, light weight and fire power make these weapons especially suited for jungle warfare. The M-72 LAW has not proven

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as successful. In tests performed by this brigade, this weapon has failed to function as much as 50% of the time. Exposure to moisture is suspected to be the primary reason for the malfunctions.

A special carrying case has been developed, and work is continuing to improve the case in an effort to hold out moisture and make the M-72 more dependable.

O. 173d Airborne Brigade (Operation SILVER CITY), dated 15 April 1966.

1. Incident/Observation(s)

The time durability of the basic load of ammunition for the M-16 rifle is very short unless definite control measures are established to limit firing on full automatic.

2. Incident/Observation(s)

When two or more battalions work together, a centralized control center for all artillery and mortar fire must be established.

Section VII. Individual Inquisitiveness and Aliveness.

A. Operational Critique, 173d Airborne Brigade, 1 - 3  
January 1966.

Incident/Observation(s)

"Reporting of the enemy situation by units was improved. It was recognized, however, that there was a reluctance to estimate the size of the enemy force in contact, after contact was made. This initial estimate is important. Just reporting heavy contact is not sufficient. Commanders must go ahead and make an estimate with acceptance that it is subject to change. This permits the next higher commander to more properly plan ahead."

B. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

All soldiers should beware of the following.

- a. Dead foliage. It may be old camouflage over a trap.
- b. Tied down brush. It may be a firing lane for an ambush site.
- c. All civilians until they are properly identified.
- d. Villages when no children are visible. It may be an ambush.
- e. Boats around villages. They may contain punji stakes, mines and booby traps.
- f. Booby traps in areas which you reoccupy.
- g. Likely ambush sites. Stay alert.
- h. Obvious by-passes at blown or damaged bridges. They may be mined.
- i. A decrease in troop alertness during long operations or periods of inactivity. Death comes swiftly in the jungle.
- j. Unpurified water, it likely contains germs.
- k. Indigenous modes of transportation. Taxi drivers have been known to transport GI's to their place of execution.
- l. Traveling alone outside your base compound. Use the "buddy" system.

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Section VII (continued)

C. Operation PADAY BAILGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 12 February 1966.

Incident/Observation(s)

1. Battlefield police is tremendously important. The VC will police up everything, including spent casings, to use against us. Particular note should be taken when casualties are being evacuated that the casualty's weapon, equipment and ammunition are also evacuated.

2. The American soldier has a tendency of immediately going to the aid of a wounded soldier. VC snipers have capitalized on this and purposely wound a man to kill two or three going to his aid. The immediate response should be that of laying down a heavy base of fire both grazing and tree spray in the direction of the sniper and the wounded man rescued by fire and maneuver.

3. Troops should take advantage of walking in APC or vehicle tracks or in others' footsteps in locations where mines are being used.

4. The importance of good leadership at the squad level is immense. Priority of work in the defense must be digging in and cutting fields of fire. Force and professionalism of NCO's becomes the vital factor when troops are tired and weary.

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Section VII (continued)

D. 1st Brigade, 101st Airborne Division, Operation  
HARRISON, dated 12 April 1966.

Incident/Observation(s)

It is difficult for a small unit leader to maintain a proper balance between aggressiveness and patience. If a Reconco patrol is unable to exploit an enemy sighting, it must observe the enemy's direction of movement and often allow the enemy to pass unopposed. This gives the enemy a false sense of security in an area we have infiltrated and on occasion provides another Reconco patrol an opportunity to ambush a relaxed enemy force.

Lesson Learned

The actions of Reconco patrols, which must aggressively exploit enemy targets of opportunity, must be carefully monitored to achieve a proper balance between exploitation and disclosure of friendly presence.

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Section VIII. Communications.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-28 (AL), dated 16 October 1965.

1. Incident/Observation(s)

a. Accuracy is far more important in field wire and cable installation than speed.

b. The base camp concept of operations requires semi-fixed installations rather than mobile, and for these installations the unit should plan to have an air conditioned semi-permanent building in which to operate the following equipment:

- (1) Radio sets of 100 watt output or more.
- (2) TMC 24 and carrier.
- (3) Telephone switchboards.
- (4) Cryptographic equipment.
- (5) Teletype equipment.

Lesson Learned

"Air conditioning successfully increases the operating life of electronic equipment by reducing temperature, humidity and dust. A secondary consideration is the comfort of personnel who operate the equipment in the closed shelters."

1. Incident/Observation(s)

a. "The base camp concept requires about 100% increase in the number of field telephones in the TOE. This also makes a larger switchboard necessary."

b. "Back pack radios are more important to this type of operation than vehicle-mounted ones. The back pack radio should be voice or CW and should have at least a 30km range on voice."

c. "A helicopter transportable radio is required when the battalion or brigade goes on an Air Mobile Operation. This radio should be capable of transmitting voice, CW and RATT at a range of at least 100km."

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Section VIII (continued)

P. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. In a static defense situation, wire has become the primary means of communications within the battalion. Lines to platoons, to outposts and CP's, as well as lines within battalion, create a need for many telephones and cause confusion at the company CP because of the large number of phones which terminate there.

Lesson Learned

Utilize the SE-22 at company level. When there are not enough switchboards, use a TA-105, jumping the terminals so that one phone is on the battalion lines and another on the company local lines. This limits the number of phones within the company CP to two and allows for an incoming call from battalion to be dispatched to any platoon outpost or forward observer. Utilization of one EL-6 and one TA-312/PT aids in determining which phone is ringing at the company OP, thus eliminating the troublesome chore of answering the wrong phone on an incoming call.

2. There is often a need for the AC-292 antenna on operations; however, the weight and bulk of the complete unit make it impractical to handle in fast-moving offensive operations.

Lesson Learned

On offensive operations, carry only the antenna base, antenna sections, coaxial cable, one mast section and the antenna bag. This abbreviated antenna can be tied in a tree or to a pole without loss of effectiveness. A saving of 30 pounds is realized.



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Section VIII (continued)

C. Operation PADDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

This operation involved a limited Objective, Seizing and Securing with two companies in the attack and the third company following in a destruction role. Wire was used with all companies both in the attack and extraction phases with tremendous success. This reduced radio traffic to a minimum and denied the enemy, who demonstrated a monitoring and jamming capability, of obtaining information or interfering with the execution instructions of the plan. The enemy completely jammed the Battalion Command frequency prior to the on-call preparation being lifted, in an effort to delay the obvious order to execute the attack. Wire was used to issue these instructions and to switch to the alternate frequency.

D. U. S. Army Vietnam, dated 28 March 1966.

1. Since all RATT operations in Vietnam must be secure, the need exists for all radio teletype sets to be able to accept the TSEC/KW-7. Several units arrived in-country with unmodified AN/GRC-46B radio teletype sets. Modifications kits are not presently available in the theater.

Lesson Learned

Units deploying to this theater should insure that modification of AN/GRC-46B is accomplished prior to departure from home station.

2. Communications security is greatly jeopardized when units arrive in-country without sufficient quantities of low level operations codes and authentication/numeral codes. The lead time for supply of NSA produced codes is 90-120 days.

Lesson Learned

All units deploying to this theater should depart home station with a sufficient supply of codes to sustain their requirements until automatic distribution can be established.

3. Frequently during combat operations, units have no ground station in forward areas capable of automatic retransmission. The Retransmission Cable Kit, HK-456/GRC may be employed with two AN/PRC-25 radios to provide a lightweight, portable ground station capable of automatic retransmission.

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4. In cases of rack-mounted equipment where there are 3 or 4 chassis, insufficient ventilation causes extreme heat to build up, resulting in overheating of the equipment.

Each chassis can be withdrawn from the rack, as cabling allows, staggering the chassis so that cooler air is allowed to circulate through them. (The vans should be air-conditioned if at all possible.)

5. It is necessary to park vehicular mounted electronic equipment at communications sites for extended periods of time. Due to the inter-connection of power and signal cables, it is impossible to exercise the vehicles. Under the circumstances, brakes tend to rust and become frozen. Furthermore, drive trains become rusty and stiffen due to the lack of lubrication.

Vehicles should be blocked underneath the axles so as to allow free turning of the wheels and periodic exercise of the drive train and ~~braking~~ *braking* system.

6. In most of the operating sites in the Vietnamese II Corps area, a considerable amount of sand and dust blows into equipment shelters and equipment racks. This clogs ventilating ducts, causes abnormal wear on rotating parts (bearings, motor brushes, etc.) and results in erratic malfunctions of switch and relay contacts.

Air-conditioning vans so that they can be kept closed will reduce this problem. Small hand-portable vacuum cleaners are needed to remove as much dust and dirt as possible before it accumulates to excessive levels.

*Electric fans and intake filters might be employed in lieu of air conditioners - especially if the intake filter material can be kept damp by dripping water.*  
B

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Section VIII (continued)

E. 1st Brigade, 101st Airborne Division, Operation HARRISON, dated 12 April 1966.

1. Incident/Observation(s)

Communications with small patrols utilizing the AN/PRC-25 radio. In any type of terrain voice carries great distances, especially at night. Patrols utilizing a radio sustain great risks to security when required to transmit situation reports, locations and other information to their controlling unit during the night.

Lesson Learned

A system of signals made by depressing the push-to-talk button on the handset, which in turn breaks the squelch on the receiver of controlling unit, is practical. The best policy is that the controlling unit query to patrol with questions that can be answered with a yes or no. Breaking squelch once indicated an affirmative answer, twice a negative answer, and three times indicating "I do not understand, say again." This system can also be utilized at any time when communications is such that one party cannot make voice transmissions, though it can receive loud and clear.

2. Incident/Observation(s)

Establishment of adequate communications from air and helicopters utilizing the AN/PRC-25 radio. When a unit is unable to obtain a Command and Control ship for its use, it must utilize a helicopter which has no internal radios for Command and Control or relay purposes. Therefore, the AN/PRC-25 must be used with a short antenna. This does not provide adequate communications.

Lesson Learned

When a Command and Control ship is not available for use and other helicopters must be used for Command Control or airborne relay purposes, it is advisable to specifically request a ship equipped with the externally mounted antenna, adaptable to the AN/PRC-25 radio. A helicopter so equipped is actually better in many respects than a Command and Control ship in that observation capabilities of passengers is increased greatly and secondly, the ship is more maneuverable due to the absence of the weight of the console.

3. Incident/Observation(s)

Maintaining communications in areas of dense, mountainous jungle utilizing the AN/PRC-25 radio. The problem was foreseen, and units deployed with field expedient directional antennas. However, it was quickly observed that this antenna was very difficult to erect and even if

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erected properly, was not capable of giving the desired results. Consequently, attempts to utilize the RC-292 antennas were initiated. The antenna was lowered through the jungle canopy to a unit via helicopter. When properly located, this antenna gave satisfactory results. The bulk weight of this antenna, however, necessitates that the components be broken down and distributed to various personnel for easy transport through the mountainous terrain.

Lesson Learned

The antenna RC-292 must be carried and utilized at all times by a rifle company, regardless of difficult terrain.

F. Headquarters, Field Forces Vietnam, Lessons Learned, dated 21 March 1966.

Incident/Observation(s)

Employment of Retransmission Cable Kit, HK-456/GRC. Frequently during combat operations, units have no ground station in forward areas capable of automatic retransmission. The Retransmission Cable Kit, HK-456/GRC may be employed with two AN/PRC-25 radios to provide a lightweight, portable ground station, capable of automatic retransmission.

G. 25th Infantry Division (United States), dated 1 January 1966-30 April 1966.

The following are some Lessons Learned during this period by two of the maneuver battalions:

1. There exists a definite need for the radio communications from platoon to squad in the defense. Even the unreliable AN/PRC-1 is better than no communications. Extra AN/PRC-1C radios could be brought in for use by the squads during the night.

2. All patrol leaders should be given the battalion command net frequency in case the company command net ceases to function. Battalion can advise the patrol of the situation and provide indirect fire support as may be required.

3. A company can employ all the Claymore mines it can get in the defense. They can be employed in depth with the majority being placed right next to the defensive foxholes. As mentioned above, they also would be useful to place in Viet Cong trenches leading into the position which cannot be covered adequately or occupied.

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Section IX. Organization.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-23 (EL), dated 16 October 1965.

1. Incident/Observation

"The Infantry Brigade staff sections as organized under TOE 7-47E are not adequately manned to meet the requirements of operations in Vietnam. The 2d Brigade has been conducting continuous 24-hour operations since its arrival in Vietnam and will continue to do so indefinitely. Operations in S2, 3, 4 and communications fields run around the clock, seven days a week. In addition, the Brigade conducts frequent operations away from its base camp area. These operations require the Brigade Headquarters to split into forward and rear elements and cause a further load on staff section personnel. Even though the Brigade will soon be operating under a division headquarters, there will be no periods when the Brigade is in reserve or without attachments."

Lesson Learned

The Infantry Brigade staff sections should be organized along the lines of the Separate Infantry Brigade TOE 7-102E.

2. Incident/Observation

"Each rifle company should have one or two four-man demolition teams."

Lesson Learned

Recommend the 106RP section of the weapons platoon be cross-trained for demolitions work.

E. Operational Critique, 173d Airborne Brigade, 1 - 8 January 1966.

Incident/Observation(s)

"Unit requests for support battalion demolition teams must be made through the S-3 channels, rather than through the logistics chain. The job to be accomplished by the teams must be stated so that the team can be appropriately tailored and equipped."

C. Headquarters, U. S. Army Vietnam, dated 30 August 1965.

Incident/Observation(s)

"Experience has shown that one staff officer should be given the additional duty as Counterinsurgency Officer. The functions of

this officer fall within both the area of the S-2 and Legal/Civil Affairs Officer. The Counterinsurgency Officer's duties would include maintaining listings of the villages and hamlets and size of the Popular Force units in each village. The CI Officer acts as coordinator with village and district chiefs in such areas as intelligence from the local populace, coordinator of operations and security with Popular Forces and supervisor of the people to people program. Therefore he should have a working knowledge of the Vietnamese language. The Legal/Civil Affairs Officer serves as an assistant to the CI Officer. This system has proven very effective in the area of control.

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(Section IX continued)

D. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. Each tactical headquarters requires immediately responsive aerial surveillance/reconnaissance support. The division has an organic ASTA platoon which can be responsive to the Division G2. Separate brigades and field force headquarters do not currently have this direct and immediately responsive support. General support (Air Force and Army Aviation under control of higher headquarters) is not sufficiently responsive to immediate requirements because of insufficient resources and inadequate communications links.

*Aircraft, like trucks, AFVs, etc. should be assigned where they are needed. FCB*

Lesson Learned All tactical commands from separate brigade up should be allocated immediately responsive aerial surveillance/reconnaissance, either in direct support or as an attached unit. *or be more organic.*

2. Counterinsurgency operations are as much political and economic as they are military. When large numbers of troops must be committed in a counterinsurgency situation, the economic and political situation has normally deteriorated to the extent that civilian agencies cannot cope with the problems. Many of these problems then, in part at least, become the responsibility of the military. Units have arrived in Vietnam without, or with understrength civil affairs staffs.

Lesson Learned

It is essential that G5 or S5 staffs become a part of all military units from Field Army to battalions at the beginning of operations and that personnel with broad training in political science or counterinsurgency fill the positions at the division or higher level. At regiment, brigade and battalion levels more limited training or experience in civic action will suffice.

3. When employed using the airmobile concept, personnel and equipment are reduced to the minimum essential to accomplish the mission. A command and control element accompanies the firing batteries and consists of three 1/4-ton vehicles and the Battalion Commander's vehicle. Personnel are limited to approximately twenty-five and include the S-3, an assistant S-3, two operations NCO's, four RTO's, one survey NCO with two EM, one commo NCO with one to three EM, an S-4 representative, two medics, a fire direction officer, chief computer and five to seven fire direction personnel.

Section IX (continued)

E. 1st Brigade, 101st Airborne Division, Operation  
HARRISON, dated 12 April 1966.

Incident/Observation(s)

Experience gained during HARRISON demonstrated that the system of sending IPW teams to battalion locations as needed worked very well. We found that better use was made of the team's capabilities of interrogation and document exploitation, the battalions were supported better and the work load was more evenly spread.



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Section X. Operations.

A. Letter, MAC J343, MACV, subject, "Lessons Learned No 54: The Battle of Ky Phu (U)," dated 27 January 1966.

Incident/Observation

The above source deals with Lessons Learned resulting from a highly successful counter-ambush action during operation "Harvest Moon," conducted by 3d Marine Division.

"Essentially, this action can be termed a movement to contact culminated by a VC ambush designed to destroy the entire Marine march column."

A Marine battalion approached Ky Phu in a tactical column with an advance guard company, a main body consisting of a rifle company and H/S Co, and a rear guard company. Security elements were operating along the flanks of the advance guard some 500-700 meters from the route of march, about 100-150 meters to the flanks of the main body, and some 200 meters to the flanks of the rear guard.

During this action, three separate engagements occurred: The initial attack on the advance guard; the attempt to encircle and destroy H/S Co; and the attack on the rear guard. All three attacks were effectively foiled by aggressive leadership, rapid and effective response to orders, fire power, and use of supporting arms, resulting in severe losses being inflicted on the attacking VC forces.

Lessons Learned

"This battle was won by aggressive application of techniques and principles commonly taught in service schools and contained in standard field manuals. Several are cited here only to confirm that a lesson to be learned is that these techniques and principles are basically sound and will result in the defeat of any enemy force if properly applied."

1. "Rapid and aggressive attainment of fire superiority by maneuver, coupled with employment of all organic and all available supporting arms (e.g., armed helicopters and 155mm artillery), will provide the margin of victory."

2. "Where effective centralized control of supporting weapons cannot be realized, supporting weapons (e.g., 81mm mortars attached to the advanced guard) should be attached to the unit most likely to experience contact."

3. "Radio discipline is essential. In this action, due to personnel casualties and destruction of radio equipment by initial enemy fire, only the battalion tactical command net was operating effectively. Outstanding net discipline was maintained, however, allowing

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effective control of the battalion by its commander, adjustment of artillery fire, and control of armed and MEDEVAC helicopters."

4. "Aggressive leadership was exhibited by all commanders, to include the immediate assumption of command of E Co by the artillery forward observer when the company commander was killed."

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(Section X continued)

B. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. During the conduct of operations, it was learned that the Viet Cong quickly became aware of the outer extremities of the Area of Operation (AO) assigned a US/FWMAF unit; thereafter, the VC would withdraw outside the AO until the operation had terminated.

Lesson Learned

To offset this weakness, the requested AO's are now considerably greater than the intended area of operations.

2. Short duration operations (3-5 days) generally met with limited success. It was learned that Viet Cong units would avoid contact and flee into safe havens, to return upon completion of the operation by US/FWMAF and ARVN units.

Lesson Learned

By extending the duration of search and destroy and securing operations to 2-3 weeks, the Viet Cong who had initially evaded the friendly forces found it necessary to return to their area of previous domination for resupply and morale purposes. Their return in many instances resulted either in a substantial willingness to fight, or in ralliers.

3. Each incoming unit should have a sponsor unit. If the sponsor unit serves no other purpose than to write to the unit while it is still in CONUS, obtain information on the arrival of the advance party and any unit impedimenta that is scheduled to arrive before the advance party and to prepare for the unit's arrival and safe transit to their ultimate location, they have made a valuable contribution.

A sponsor unit should be appointed for each unit deploying into an overseas area.

C. 1st Brigade, 101st Airborne Division, dated 28 March 1966.

Incident/Observation(s)

1. Combined operations with CIDG and ARVN units have been very successful. It is advisable, however, to send a liaison officer with a radio with these units during an operation in order to maintain close communication and to verify reports.

Lesson Learned

Some form of communication and liaison must be provided when operating with ARVN units.

2. When a unit conducts a search of a village, the presence of National Police or local officials results in greater cooperation by the villagers with the search parties. National Police and local officials are often able to point out suspects, question the villagers and act generally as a go-between for the searching unit.

Lesson Learned

The use of National Police or local officials should be considered when planning a search operation.

3. VC rice caches, particularly the larger ones of 20 to 100 tons or more, are often located in inaccessible areas and are extremely difficult to extract.

One solution which is sometimes possible is to arrange with the District Chief or Province Chief before an operation begins to have 200 to 300 porters available and ready to enter any area where rice caches may be found, under the protection of US forces. Evacuation by helicopters has sometimes been accomplished, but the suitability of employing them to remove large quantities of rice is questionable.

4. As an alternate to extraction of large rice caches, destruction may sometimes be indicated or required. This is a difficult problem and one which has not yet been completely resolved. Attempts to burn rice with gasoline, white phosphorous and other incendiaries have been only partially successful. Rice spoilage kits (not yet available) appear to be suitable only for relatively small quantities. The method which seems most effective is to dump rice into a stream, into a rice paddy filled with water, or in rainy weather, simply to scatter it on the ground.

Lesson Learned

The best method of destroying rice is to subject it to the deteriorating effects of water.

## Section X (continued)

## D. 1st Infantry Division Lessons Learned, dated 15 March 1966.

Incident/Observation(s)

Compromise of tactical plans is a constant problem. One possible source of compromise stems from the requirement to submit in advance a request to ARVN for operations in an area outside the assigned tactical area of responsibility. This request is then processed by ARVN through Province and District Chiefs prior to approval.

To overcome the possibility of compromise, requests are made for much larger areas than are required for an operation. Deception plans effectively supplement actual plans by camouflaging the primary intention.

Section XI. Administration and Logistics.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPC-25 (IL), dated 16 October 1965.

1. Incident/Observation

a. "The Brigade Supply Section is composed of an 18-man forward supply section and a 5-man augmentation to assist in office functions which the section would not be responsible for if the brigade were not operating alone."

b. "Without additional equipment (not TOW to the section), e.g., forklifts, reefer units, fuel system supply point, 5000-gallon fuel tanker, etc., it would not have been able to effectively support the brigade."

c. "The problem areas of maintenance have been in Signal and Engineer items. The high rate of failure in Signal items can be directly traced to the moisture problem."

d. "Minor cuts and abrasions must be treated promptly to avoid infection. The healing period in this climate is much longer than in COMUS."

2. Incident/Observation

"The jungle fatigue is quick drying and provides good ventilation, whereas the regular fatigues are more restrictive and take much longer to dry. Continuous movement and climatic conditions are hard on the regular boot, and they last on the average about 2 months. The present jungle boot is excellent."

Lesson Learned

"Jungle fatigues and jungle boots should be issued to all personnel."

3. Incident/Observation

a. "Each individual coming to Vietnam should be issued some type of gym shorts and sandals to be worn within base camp areas. This would greatly reduce the number of cases of immersion foot and body rashes."

b. "Develop a new type air mattress for issue. The present one is unsatisfactory. It is easily punctured by branches and twigs. The air valve often splits or comes out of the air mattress."

c. "Develop and issue a lightweight poncho and drop cloth. The present poncho is too heavy and cumbersome and does not keep the individual dry. A lightweight drop cloth would provide the individual protection against the moisture of the ground when he is sleeping at night."

d. "Issue one (1) lensatic compass per fire team. This is an absolutely necessary piece of equipment in Vietnam."

B. 1st Cavalry Division, 15 November 1965. *Notes*

Incident/Observation(s)

1. "Casualties are a critical problem. When fire is pinning down individuals, one casualty will cost one or two more men attempting to get to him."

Lesson Learned

Leaders at all levels in contact under fire must act cautiously in getting casualties out. Troops must not get so concerned with casualties that they forget the enemy and their mission.

2. "Evacuation of casualties from the areas of contact in this action was a problem. TO&E litter bearers would have been a big help. As it turned out, fighting strength had to be used to carry out a wounded man (3-4 required) or to assist many walking wounded. (One man at least required in many cases.)"

3. "When a man is killed or wounded, his weapon and some of his equipment get separated from him in many cases. Some of our equipment was evacuated all the way to Qui Nhon. Many enemy weapons which we captured and sent out with friendly KIA and WIA were never seen again."

Lesson Learned

An S-4 representative, officer or NCO with assistants, must be present at least in the battalion forward aid station and at the collecting company at Forward Support. Maintain a weapons pool, vicinity of the FE CP, of weapons taken off friendly KIA and WIA for immediate re-use for weapons damaged in the battle area.

4. "Rations are no problem. Few men eat much when in a heavy action; however, water is extremely critical."

C. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

Incident/Observation(s)

1. Policing the battlefield of friendly and enemy equipment is time consuming and can hinder the pursuit of the enemy.

LESSON LEARNED

In some instances it may be appropriate to accept the loss of some equipment as a combat expedient.

2. Whenever a 155 howitzer battery is attached to the Brigade, additional ammunition handlers must be provided the LOC to handle the additional and larger size rounds.

D. Operational Critique, 173d Airborne Brigade, 8 - 14  
January 1966.

Incident/Observation(s)

A train headquarters established in the operational area from elements of the support battalion is of great advantage. This small headquarters will coordinate all logistical support activities.



Section XI (continued)

E. Lessons Learned (1 October-30 November 1965), 1st Cavalry Division (Airmobile), dated 10 January 1966.

Incident/Observation(s)

The reaction time for medical evacuation missions was sometimes increased during the initial stages of airmobile assaults due to lack of familiarity by medical evacuation pilots with PZ's and LZ's being used by specific units. Frequently Med Evac ships have had to search unfamiliar terrain for the exact LZ's, thus losing valuable time.

Lesson Learned

Medical evacuation helicopters should follow major troop lift formations during the initial assaults to determine the LZ's being used and to become terrain oriented. Further, the presence of Med Evac ships in the initial assault echelon greatly speeds evacuation at that critical time.

Section XI (continued)

F. Operation PADDY BRIDGE (14-16 February 1966), 2d Battalion, 27th Infantry, dated 18 February 1966.

Incident/Observation(s)

1. Preparations in the form of evacuation bags and a vehicle should be on hand in the vicinity of the Forward Medical Evacuation Center to evacuate KIA's as quickly as possible without utilizing Forward Logistic Areas.

2. Planning provisions should be made to make immediate replacement for aidmen who become casualties.

G. U. S. Army Vietnam, dated 28 March 1966.

Incident/Observation(s)

1. From significant battle and non-battle personnel losses during the initial commitment of the 1st Air Cav Div, it was learned that plans for the replacement of these losses must be prepared well in advance. If provisions are not made to compensate for these losses before they occur, units will continually engage in operations at less than 100% present for duty. Therefore, it is necessary that requisitions be based on 110% of authorized strength in order to attain and maintain present for duty strength of 100%.

2. Experience in some units has shown that wear-out period for boots and fatigues is only three weeks under the most adverse conditions. Fatigues tear and rip frequently, and boots rot from constant dampness. *and use of wax polish instead of oil (neatsfoot).*

Lesson Learned

Requisitioning objective should be increased to assure adequate stockpile.

3. Refrigeration facilities for mess halls are essential. Sanitation and temperature conditions in Vietnam promote rapid spoilage of perishable foods.

In the absence of standard refrigeration units, CONEX containers can be provided with sand bag insulation to provide iced cold storage facilities.

H. 1st Air Cavalry Division (Airmobile), 3d Battalion, 18th Artillery, dated 28 March 1966.

Incident/Observation(s)

Unit personnel attendant at unloading of equipment.

a. When the equipment for this unit was being unloaded at Qui Nhon, battalion representatives maintained a 24-hour-a-day watch over all equipment being unloaded. As a result, all of our equipment was promptly and properly recognized and secured. Other units who did not have representatives on the beach had equipment missing.

b. All units having equipment being unloaded from a vessel should maintain representatives at the unloading site until such time as they have received all of their equipment.

Any equipment not under guard in a counterinsurgency situation is likely to be stolen by guerrillas or black market operators or merely appropriated by other units, including American units, who need the equipment involved.

B

## Section XI (continued)

I. 173d Airborne Brigade (1 October 1965-31 December 1965), dated 14 March 1966.

1. Incident/Observation(s)

Vietnamese interpreters. The majority of Vietnamese interpreters thus far used by this brigade were not fully qualified or were not dependable.

Better qualified personnel must be provided in order to quickly and efficiently exploit the advantage offered by VC suspects, prisoners and documents.

2. Incident/Observation(s)

The technique of establishing a Forward Medical Clearing Station at the Brigade Forward Support Base during combat operations proved very successful. Many lives were saved by the immediate medical care available at the station. In addition, personnel with minor wounds, illnesses or even dental problems could be treated and returned to duty immediately.

J. 1st Infantry Division Lessons Learned, dated 15 March 1966.

1. Incident/Observation(s)

The shipment of finance personnel and records by surface transportation during deployment of the division to Vietnam resulted in numerous personnel receiving late pay. This problem could have been solved if finance personnel and records had been air lifted. This procedure will permit the finance office to retain control over its personnel and records for a longer period of time, allowing finance services to be maintained until departure of troops and immediately reinitiated upon their arrival at destination.

Lesson Learned

Airlift of finance personnel and records for units deploying to Vietnam will result in uninterrupted finance services.

2. Incident/Observation(s)

The quantity of medical expendable supplies for units deploying to Vietnam should be increased.

Medical expendable supplies for deploying units was limited to 15 days. This amount was found to be inadequate due to resupply delays initially experienced upon arrival in-country.

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Medical expendable supplies accompanying units deploying to Vietnam should be increased to 30 days to overcome initial delay in resupply efforts.

3. Incident/Observation(s)

Intracaths have been used in Vietnam with a high degree of success. In combat situations, necessity for first aid and resuscitative care requires the rapid administration of blood and I.V. fluids without having to resort to time-consuming methods of venous cut-down. Use of plastic intracaths or venocaths offers the physician and/or aidman a quick action method of administration of fluids.

Intracaths and venocaths should become standard items available for mass issue to medical facilities throughout existing and programmed medical channels in Vietnam.

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Section XII. Civil Affairs.

A. Command Report for Quarterly Period Ending 30 September 1965, Reports Control Symbol CSGPO-28 (RL), dated 16 October 1965.

Incident/Observation

Operating separately, brigades should have a Civil Affairs Section.

Lessons Learned

1. "Operating as a separate brigade, the unit Civil Affairs Section should consist of three members as follows: Major (branch immaterial), Team Chief; SFC E7, MCOIC; Sp 5, Clerk Typist."

2. "All personnel should be school trained in Civil Affairs or have experience in this or related fields (Psychological Warfare, Military Government)."

3. "Two interpreters, fluent in English as well as the language of the target people, are an absolute necessity."

B. After Action Report, 1st Cavalry Division, dated December 1965.

1. Incident/Observations

a. "One of the essential ingredients of success in reducing the equipment and manpower required to achieve the aim of an operation is the integration of a preplanned Psywar program specifically tailored to the target area."

b. The area scheduled for pacification should be assigned to units far enough in advance to permit the planning and organization of the psywar program BEFORE the beginning of the operation.

c. "Contingency funds should be made available at battalion level for the local purchase of candy and supplies peculiar to the area of operations. This would have a secondary effect of stimulating the local economy."

d. It is recommended that military offensive operations be carefully evaluated to preclude unnecessary property damage and personal injury to the civilian population.

e. It is considered vital that operations be of sufficient duration so as to have a stabilizing and lasting effect in the area of operations.

2. Incident/Observation

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National Police familiar with the area of operations must accompany military units on operations. They are vital both in the reestablishment of local civil order where VC influence has resulted in complete domination of the village leadership and in sorting out the VC from the local population.

### 3. Incident/Observations

A problem that caused a loss of momentum in search and destroy operations was the evacuation of rice and Viet Cong or Viet Cong suspects. A satisfactory system was worked out using two helicopters and one squad equipped with sandbags and shovels. The force was maintained on standby at the battalion CP. When a VC rice cache was located, the reaction squad was sent to sack and evacuate the rice. The same squad was also used to guard and evacuate captured VC or VC suspects, thus ground units were released quickly to continue their operations.

C. Operational Critique, 173d Airborne Brigade, 1 - 8  
January 1966.

#### Incident/Observation(s)

1. "It was proposed that a team consisting of a corps representative; experts or advisors on handling, housing, feeding and evacuation of refugees; National Police representatives; and any other Vietnamese personnel deemed necessary be formed and attached or assigned to the Brigade. The corps representative would in fact be a GVN political advisor to the Brigade Commander. USAID or their US Agency representative may also be suitable."

#### Lesson Learned

There is always a problem of being cautious not to alert too many individuals on forthcoming operations for security reasons; therefore, this type of planning usually is done at the last minute and on short notice.

2. "As a combat expedient, with no policy announced on refugees, the best procedure is to get control of all civilians in the operational area and detain them for a limited period of time until a decision is made as to their disposition. They should be told that they are being supervised for their own safety while the combat operations continue in the area."

D. Operational Critique, 173d Airborne Brigade, 8 - 14  
January 1966.

#### Incident/Observation(s)

"In future operations it is recommended that if rounding up of livestock, or the destruction of VC houses and rounding up of civilians are required, that ARVN forces be brought in to perform these tasks."

Section XII (continued)

I. Headquarters, 3d Marine Division, dated 31 December 1965.

Incident/Observation(s)

1. Civic action projects should be undertaken through the local and national government channels to strengthen the individual support of the government. In daily contact with the people, every opportunity to emphasize the government of the country should be pursued. No matter how backward an area may seem, a definite route of communication to the people exists through the village and hamlet officials. Further, each time the local chain of communications is used, the cooperation between the local people and U. S. military is enhanced.

Lesson Learned

All civic actions be accomplished through established local officials. In an area where local leadership is weak or non-existent, efforts must first be directed toward the establishment of a viable government.

2. Emphasize participation by the local nationals in all local improvement projects. This should include not only the execution of work but also the initiation of ideas. The people are usually more willing to accept changes when they think they instituted them. Local improvement projects should be of the self-help or joint-work type. When projects are done for them, the people have a tendency toward complacency and expect other projects to be accomplished for them, while not really accepting or appreciating the results of the activity.

Lesson Learned

Units must insist that the local people do their share of all civic action projects on all levels. Whenever possible, the initiative for the conception of ideas and projects should be passed to the local officials.

3. The goal of Civil Affairs/Civic Action in RVN is to support the local government to the end that direct USMC involvement is minimized and the people become accustomed to seeking assistance from their own officials. Direct gifts of CARE, USOM or other materials (other than on appropriate gift-giving occasions, such as children's TET, Christmas, etc.) by Marines to the people tend to defeat the goal. Distribution of gifts during a large public gathering is not desirable, as the position of the local officials is seen as obviously a go-between.



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Section XII (continued)

F. Headquarters, Field Forces Vietnam Lessons Learned,  
dated 21 March 1966.

Incident/Observation(s)

Overcoming lack of troop awareness of current psy ops activities. Aerial loudspeakers are being used to exploit psychological opportunities that may be developed during tactical operations, such as isolated groups of refugees or potential ralliers. For maximum effectiveness, friendly troop units must be aware of the purpose of the broadcast and of any part they may be expected to play. Dissemination of such information through command channels is difficult and time consuming. A solution is to broadcast a translation of the appeal in the language of the friendly troops, English or Korean, explaining at the same time what is expected of ground units. A broadcast of this type is particularly useful when the appeal consists of directions on how to rally or surrender in that if special considerations are involved, it insures that the ground troops understand these as well. This practice also has the added benefit of providing an on-the-ground check of loudspeaker effectiveness and a chance to determine if any offset in flight path is required.

When tactical and security conditions permit, this technique should be used.

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